

# AERO MODELLER

SEPTEMBER - - 1939

Vol. IV

No. 46



Viscount Wakefield receiving the photo of His Majesty King Peter II of Yugoslavia from the Yugoslav Minister, His Excellency Mons. Soubbotitch. Mons. Miroslavjevic, and on right, Dr. A. P. Thurston, President of the Society of Model Aeronautical Engineers, are also shown in the picture.

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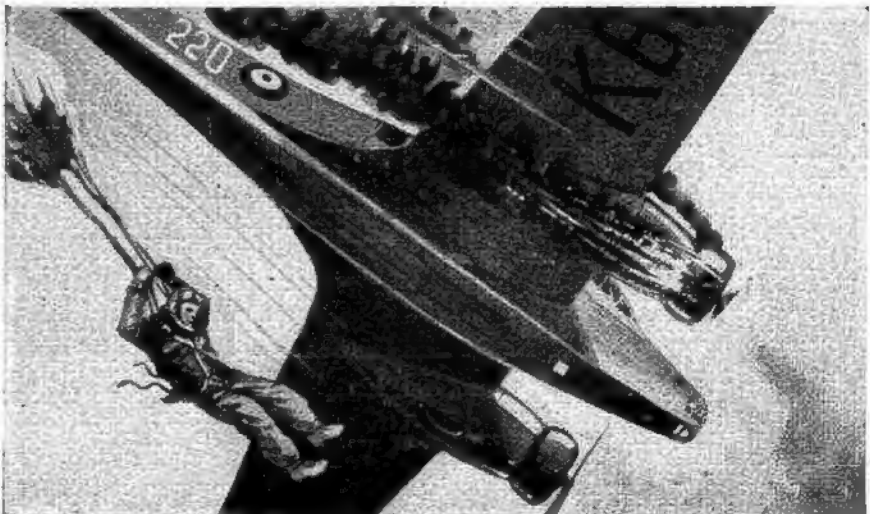
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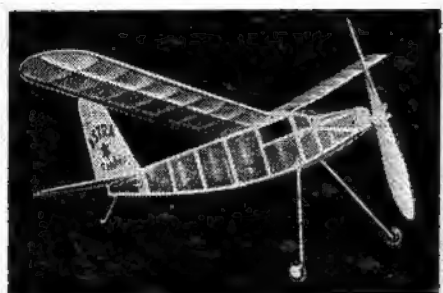
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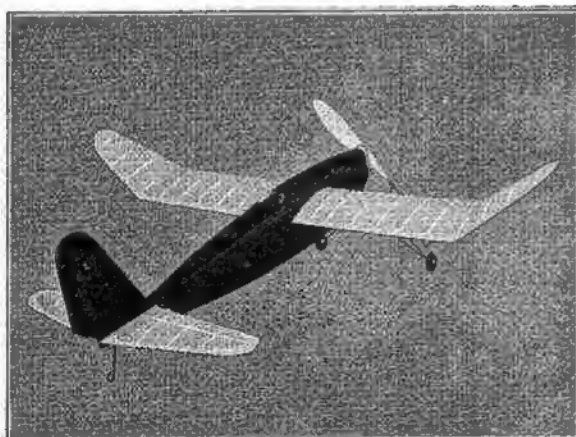
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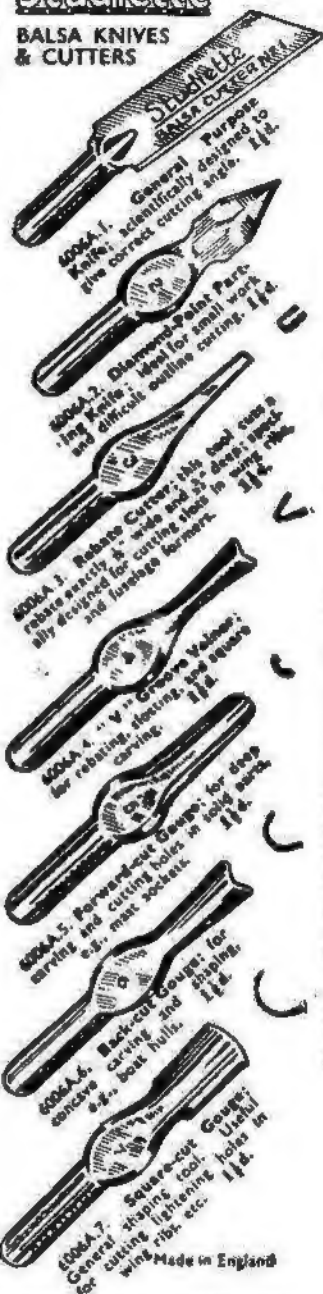
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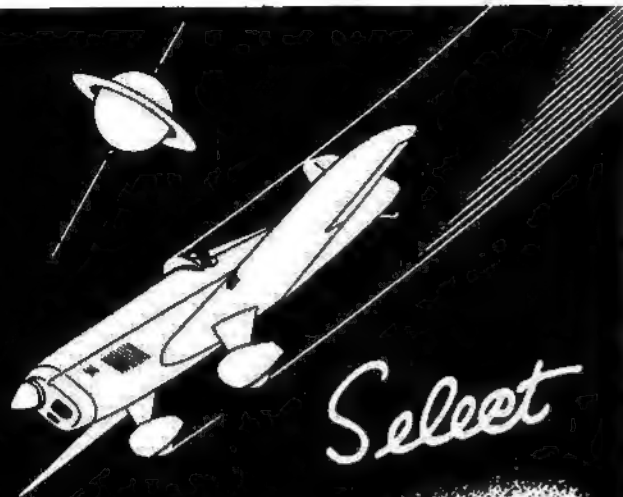
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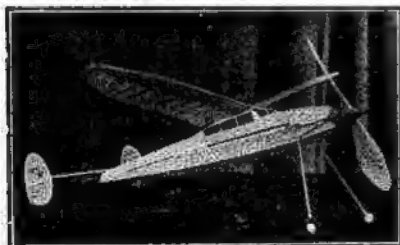
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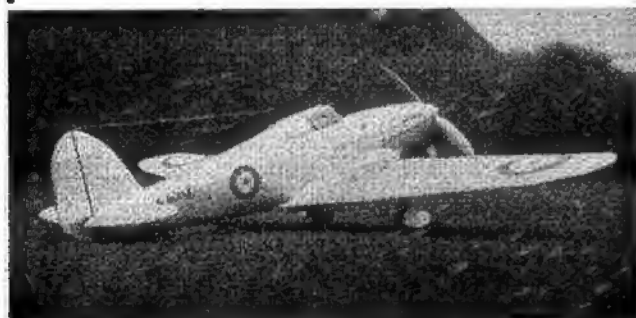


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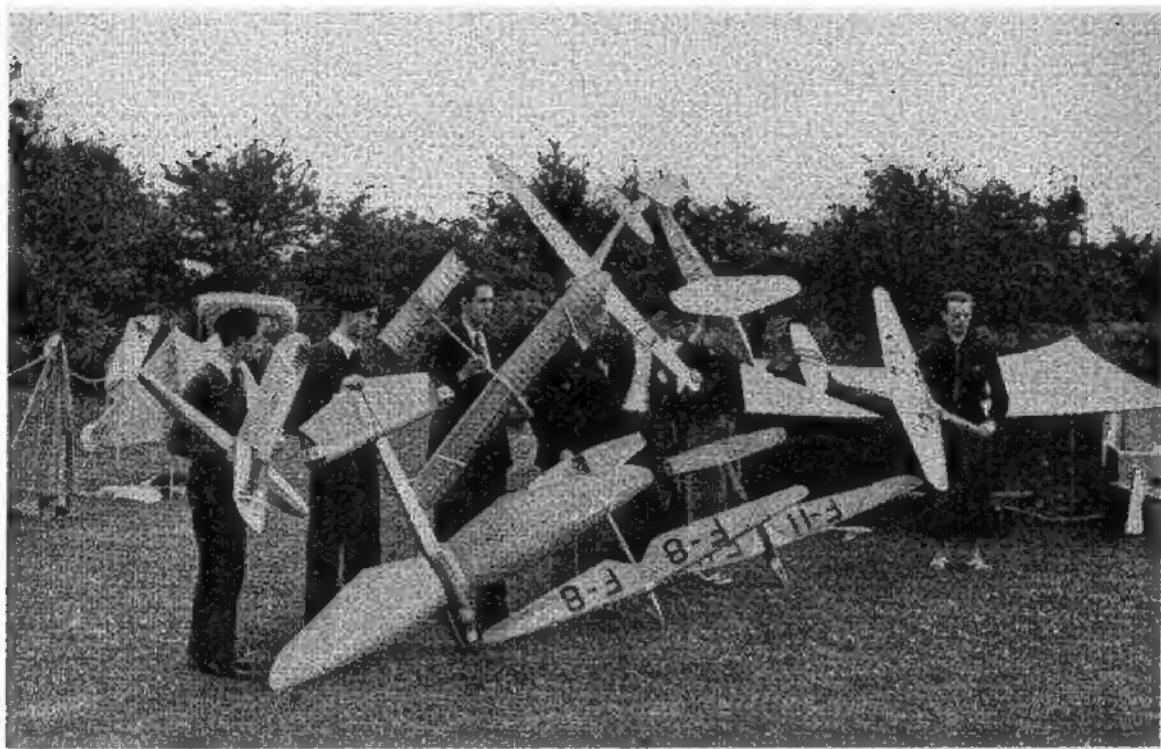
SEPTEMBER, 1939

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For Editorial and Business Notices see  
last page

## THE WINNING TEAM—



*Mons. Herve, R. Chardard, A. Vauboin, Bougueret, E. Chardard, and L. Vauboin.*

*The prize of 10s. 6d. offered for the best caption for the photograph published on this page last month, has been awarded to Mr. E. Stoffel, of 205 Wanstead Park Road, Ilford, Essex.*

*"... a thousand and one, a thoousaand and twoo, a thoousaand and threeeeee . . . . ."*

*Consolation prizes, each of 5s., have been awarded to Mr. J. T. Carr, of 4 Motcombe Lane, Eastbourne, Sussex, for:—*

*"... turned out nice again!" (With apologies to George Formby).*

*And to Mr. D. Scuffell, of Ashcroft, Burland Road, Romford, Essex, for:—*

*"Torque about Luck."*



# The AERO MODELLER

SEPTEMBER, 1939

Vol. IV. - No. 46

Tel. Leicester 65322

INCORPORATING THE 'MODEL AEROPLANE CONSTRUCTOR'

## EDITORIAL



It is only natural that we should have liked to have seen Great Britain named as the winners of the Wakefield Cup, but as consolation we can bear in mind that Canada is part of the British Empire, and so take pride that "between us, one way or another," we keep the flag flying pretty near the top of the mast.

The first four placings, with times, are printed together, with results of other competitions, on a "stop press" page, number 629, in this issue. As the team has not yet returned to this country, we cannot give a detailed report in this issue of the Wakefield Competition, but in our next issue we shall publish a fully illustrated report by Messrs. Stott and Lees, who were specially commissioned, and for whom special arrangements were made in America, so that they should have every facility for obtaining information.

Meanwhile, in this issue we present a full report of the King Peter Cup Competition, and the dinner given to the competing teams by Viscount Wakefield. His Lordship's speech, and that of Dr. Thurston, are fully reported also.

Until a full report is available, we can hardly discuss the Wakefield results; but we have heard that the day was fine, and that most of Korda's points were scored with *one* of his flights, something over 40 minutes, and likely to stand for a new world's record; so it looks as if the "thermal hunters" still have it! Anyway, next month we shall know just how it *was* done, and then all the experts can write in to us saying that the rules should be altered in such and such a way. . . .

\* \* \* \* \*

In our June issue we published an article by Herr Paul Schroter, leader of the German King Peter Cup team, on Model Aviation in Germany. Herr Schroter invited English aero-modellers to correspond with German aero-modellers—with whom he would put them in touch. A few weeks ago we had a letter from Herr Schroter, in which he said:—

"I beg you to write a few lines in the next issue, telling those 117 men and boys (in words one hundred and seventeen), from England, India, Portugal, Egypt,

who have written me letters, short ones and long ones; they will all have an answer, and the address of a German who also likes to correspond and change magazines. Did you expect that such a number would take up the idea I mentioned at the end of my article? Well, I am very glad about it." . . .

. . . And so are we. Quite a number of letters for Herr Schroter came to our offices, and altogether we estimate that over 150 letters from aero-modellers all over the world have been received by him. We trust that many friendships will be made, as a result of this article, for the further strengthening of the bonds between aero-modellers.

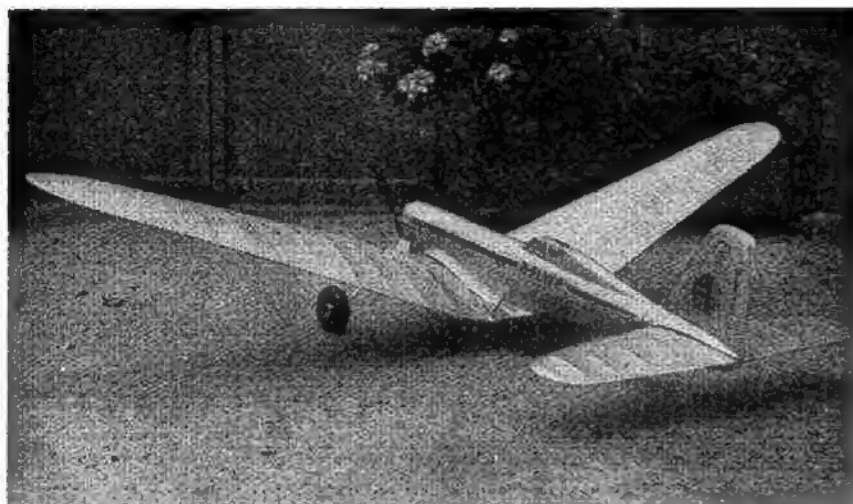
\* \* \* \* \*

In our "Letters to the Editor" pages this month we publish two very interesting letters received from abroad. We make no excuse for publishing them, because they are appreciative of our journal—they are also equally appreciative of other journals. In one case the writer asks for English aero-modellers to correspond, which we trust a number will do, and in both cases it is interesting to note the conditions in which these aero-modellers carry on their hobby by themselves. We hope that they will not be swamped with too many replies!

\* \* \* \* \*

In our July editorial we referred to the flying of a petrol 'plane at the King Peter Cup trials at Fairey's Aerodrome on Whit Monday. We condemned a "certain person" who, without asking permission, flew his 'plane. We said that he did not report to the S.M.A.E. officials when asked to by loud speaker appeal. In due course this enthusiast wrote to us, and pointed out that he *did* come forward as soon as he stopped his engine and could hear the loud speaker, and we are glad to make this correction. We are glad, also, that as the result of this editorial, the matter has been discussed with the gentleman concerned, who has agreed that he had no right to fly his 'plane, and that our criticisms were justified.

When "Clubman" sent in his report of the King Peter Cup Competition, we found a criticism at the end and we print it herewith, since it bears so forcibly on



*Here is Major C. E. Bowden's latest petrol 'plane, complete with N.G.A. transfer. Major Bowden is, of course, the Honorary President of the N.G.A.*

this question of the indiscriminate flying of petrol 'planes at international contests:—

"I have one criticism—why on earth do people leave piles of litter about on a place they must know is only permitted for our use through the courtesy of air-minded folk? It beats me, as does the rank inconsideration of petrol modellers, who will persist in bringing out their "stink wagons" while an international contest is still being run. Will you never learn—or is it one of those occasions when one must show off? It seems to me that it is time the S.M.A.E. put their foot down well and truly in this direction, and my weight can go to theirs if required!"

Recently we received a letter from the Hon. Sec. of the Hayes and District Club, in which he said:—

"The Hayes and District Model Aero Club have, with few exceptions, held their meetings on the Great West Aerodrome every Sunday for six years, and are solely responsible for the conduct of such meetings. The S.M.A.E. and "Northern Heights" only have control on the days allocated to them, and I, the secretary of the Hayes and District Club, am still held personally responsible by Flight-Lieut. Staniland, manager of the Aerodrome, for the behaviour of all users of the 'drome, whether members of our club or not, and, of course, have to receive any complaints which may arise.

"We are naturally proud of the privilege accorded to us by Mr. C. R. Fairey, and always do our utmost to maintain order, which fact is recognised by the management, and I must confess that we are always rather nervous when the aerodrome is used by other clubs, who sometimes cause us considerable anxiety on the score of trespass and the depositing of litter."

Whilst we appreciate the difficult position in which the Hayes Club may find itself when Fairey's Aerodrome is used for an International Competition run under the control of S.M.A.E. officials, we feel that those members of this club who took petrol 'planes to the field on Sunday, the second day of the King Peter Cup Competition, and ran their engines during the competition, were neither helping their visitors nor their club. These petrol 'planes were all grouped quite near to the loud speaker, and whilst we know that the running of their engines

was for the benefit of certain people who were conducted to them, we feel that no useful purpose was served, and, of course, the loud speaker was drowned by the noise. Later, we noticed several persons who appeared to have no interest in the competition at all, gliding petrol 'planes out on the aerodrome.

We are all in favour of petrol 'planes—but do feel that at national or international competitions for gliders or rubber-driven models, they should be definitely "grounded" and their engines kept silent, until the close of the competitions and permission to fly has been obtained from the officials in charge.

\* \* \* \* \*

We are pleased to hear of the efforts being made to develop aero-modelling in Scotland. At the recent competition for a trophy held in Glasgow, officials of the various clubs present took the opportunity to hold a meeting to endeavour to form some scheme whereby the Scottish Clubs could keep in touch with each other. After some discussion, it was decided to run monthly competitions in all the clubs, models being flown off under current Wakefield rules. The times of the first two entrants in each club's event are to be sent to the Dundee Club, each month. These various times will be tabulated, and the position of each club will depend on the figures in the "total time" column, and will vary from month to month, according to how the flying goes. The under-named clubs are expected to take part in this "league": Aberdeen, Ayr Academy, Dundee, Dunfermline, East Fife, Edinburgh, Fife, Glasgow, Glengarnock, Greenock, H.M.S. Caledonia, and the Huntley Boys.

We understand that competitions will be held monthly until and including October, and we shall be pleased to support what we feel is a very sound way of developing the club movement in Scotland, by presenting the necessary cup, without which the winning club would be unable to celebrate in the usual manner!

\* \* \* \* \*

This month we are publishing, as promised, an up-to-date list of model aeroplane clubs in this country, with the names and addresses of all their secretaries. We feel sure that the way in which we have arranged this list with information regarding the S.M.A.E. and the N.G.A. will be of real use to many of our readers.

We hope to do the same in the spring of next year, and we hope on that occasion that the space occupied by the list of subscribers to the Wakefield Team will be considerably larger. We recommend all club secretaries to mount this sheet and hang it up in their club rooms, where all may see the names of those clubs who supported the fund. And maybe at some of the next club meetings there will be folk brave enough to rise and ask the question, "Why didn't *our* club contribute?"

THE EDITOR.

Last month we published a short article on Co-axial Airscrews. This was written by Mr. Gordon Bodson, and not Badsy, as was incorrectly printed.

# This is NOT an S.O.S. It is NOT an A.R.P. Call It is an Appeal

It is a genuine appeal to all men and women to do just that little bit extra; to make that extra effort which will make the difference between efficiency and stagnation. It is not enough to merely earn a living; we must make the best of whatever abilities we possess. We cannot wait for those abilities to develop themselves unaided: they must be trained.

By becoming efficient in your vocation you can give the best service to your country and to yourself. The more you increase your earning power the better it is for the country, and for yourself personally.

War or no war, earning power always brings its possessor to the front. It is no use waiting for better times. The ideal opportunity never arrives. We have to make the best of existing conditions. Therefore, delay is useless; it is worse, it is harmful.

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## DO ANY OF THESE SUBJECTS INTEREST YOU ?

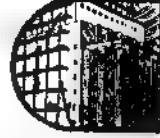


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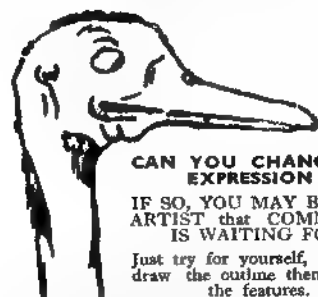
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## THE 1939 KING PETER

By CLUBMAN

*Viscount Wakefield speaking at the dinner. He is holding in his hands the glider, "Entente Cordiale," presented to him by the French team. Below we reproduce a letter sent by Viscount Wakefield to Dr. Thurston, President of the S.M.A.E.*

Everard welcomed the visitors, and promised to fly down to Faireys on the Sunday to witness the competition. Dr. and Mrs. Thurston, who had an extremely busy week end, were to be seen everywhere doing the honours among the visiting teams and friends. (This was one of the occasions where I wished I had paid more attention to my French lessons at school, and I shall have to start brushing up in readiness for next year!)

Saturday saw the commencement of flying at the aerodrome, kindly loaned for the occasion by Mr. C. R. Fairey. Unfortunately, test flying of large machines was taking place, and caused a long delay in the start of proceedings, but that was out of the control of the organisers. While many hitches occurred during the flying period, I would like to stress the fact that this was not the fault of the S.M.A.E. Competition Committee, but more to be blamed on the rather too complicated rules and regulations laid down for this event, many of which I'm afraid were formulated without regard for the interpretation of them, or the expense involved.

**T**O do full justice to this event would require a greater pen than mine, but I will do my best to give you a comprehensive idea of the happenings and incidents that took place from July 21st to 24th.

Instituted last year, this event is now of only secondary importance in the aero-modelling calendar to the Wakefield Cup, and has created a great deal of interest among the European countries, more especially with this year's contest being for model gliders, a phase that receives much more attention abroad than here. With others, I'm afraid I looked on this year's event as a foregone conclusion for a foreign win, and it was a pleasant surprise to find that in the final totals, England was placed 2nd, though at one time it did look as though we should be the "wooden spoonites."

With Belgium, Denmark, France, Germany, Great Britain, Holland, Switzerland, and Yugoslavia competing, the event was assured of wide interest, and the types of models were almost as varied as the different languages and accents to be heard throughout the four days.

The actual technical details commenced on the Friday, when models were measured, weighed and checked at the Y.M.C.A. Headquarters in Great Russell Street, and although a large room and ante-room had been booked, the space was just chock full of gliders and humanity. Models ranged from three to twelve feet in span, and were of all shapes and sizes. To attempt to describe the models in detail is impossible here, but the majority of the continental jobs were of around six to eight feet in span, with sharply dihedralled tips in vogue. The English machines were amongst the smallest of the lot, and our chaps will have to get down to some serious thinking on the glider question for 1941. Undoubtedly, very few of us here have given a deal of thought to gliding, and without wishing to appear unpatriotic, I say the British collection of models looked rather a haphazard bunch against some of the foreign equipment.

Messrs. Smith and Houlberg were kept hard at it, steel rules and calipers in hand, and were later assisted by Mackenzie and Rushbrooke, when the pressure began to get overwhelming. Lunch was partaken at the Corner House, and proved a very jolly affair.

At the conclusion of the checking, the party adjourned to the Royal Aero Club for tea, where Sir Lindsay

Wakefield House, Cheapside,  
London, E.C.2.

July 25th, 1939.

DEAR DR. THURSTON,

Let me congratulate you upon the great success of yesterday evening's function. I realise that with all the details of the organisation of the competition itself, and also the preparations for the departure of the Wakefield Team for America, the arrangements for the banquet must have been a heavy burden upon you and your

I am sure that the general feeling was that we had had a very happy evening, and I am most grateful to you and to Mrs. Thurston for your kindness to me personally.

My wife asks me to express her very sincere thanks for the kind message which you sent to her in your presidential capacity as from the assembled company.

I hope and believe that one effect of this dinner, and especially of the presence of Sir Kingsley Wood, will be to bring fresh support for the Society of Model Aeronautical Engineers, and thus encourage you and your officers in your endeavours.

With kindest regards,  
Yours sincerely,

*Wakefield*  
*of the*

# CUP COMPETITION

*Lady Kingsley Wood presenting the King Peter Cup to Mons. Guillet, leader of the French team. Below we reproduce a letter received by Mr. J. C. Smith, Hon. Comp. Sec. of the S.M.A.E., from Mons. Massonet, President of the Committee des Modeles Reduits, F.A.I.*

The most serious delays were caused through the lack of range-finding equipment, only two articles being available—and only one being in working order during the first day's flying. This was a great pity, and must have given our visitors a poor opinion of our resources, especially those of our military sections. Foreign enthusiasts seem to be able to obtain much more help from such sources than we can here, as witness the meeting in Yugoslavia last year, when the whole technical side was handled and equipped by the Military. Obviously, the S.M.A.E. are not in a position to purchase unlimited equipment for such an event, and it says much for the way in which things had been arranged that the event was run as efficiently as it was, considering the limitations imposed.

With the flying order drawn for, flying got under way with conditions far from perfect for model flying. A fair wind, blowing from the "brook end" of the 'drome,



took models out of sight far sooner than was comfortable, and the range finding gang were hard put to it. W.O. Gutteridge, in charge of the charts, etc., was going at it hammer and tongs, and a word of praise is due to all those willing helpers who did so much towards the running of this undoubtedly difficult event. Air Force cadets under the charge of Messrs. Gutteridge, Crittle, and Adams were of invaluable service, likewise the stewards, timekeepers (under the charge of Mr. Gordon), and many other willing horses. The owner of "Dick Turpin's Kitchen" must also be thanked for the use of the telephone, many machines being quickly recovered through this service.

Slowly but surely the first round went on, but by the time a halt had been called for the day, many had not had even their first flight, and there were four rounds to go! Evidently something had to be done, and representations were made the following day to discontinue the use of the range-finders, and continue on time factors only. This would have been the only reasonable solution to the many difficulties, but certain objections were raised, and the second round was proceeded with, though with both range-finders now working, things were run off smarter. Time was getting so short, however, that the third—and final—round was judged on time only.

Many fine flights were witnessed, one very interesting flight being made by a tailless type, flown by one of the Dutch team. All kinds of durations were being made, and it looked as though England was going to be well and truly down the list, our best time being just under three minutes, by Mr. Hill, of the Lancashire Club, whose machine was flown proxy by "Rushy." (Incidentally, following this flight, after getting the model right up on the end of the string, and having quite a struggle to release it, Rushy was in great demand as "official winder-upper" to the English team!) He certainly had the knack of playing a model like the proverbial trout.

French, German, and Yugoslavian machines were putting up durations of many minutes, with the English team, not exactly despondent, but nevertheless rather uncomfortable. On his second flight, Mr. A. Cox, of Northern Heights, who placed third in the trials, made a magnificent flight of 8 min. 35.5 sec., and after some considerable time the model was recovered from 8 miles 220 yards away. It was this flight that pushed England up into

89 Avenue Mozart,  
Paris, 16.

July 25th, 1939.

DEAR MR. SMITH,

My husband has asked me to put pen to paper as it seems rather foolish to write to you in French and to translate into English, for the sake of giving his letter a more official flavour.

He wishes me to congratulate you on the splendid show you put up. It is no easy task to organise such a meeting, and its success is certainly due in great part to your untiring efforts, understanding, and unlimited patience. In international work the language problem always complicates matters, and the care you had given to detail, as well as your readiness to agree to practical solutions, were of considerable help to him.

He would also be glad if you would convey his appreciation and thanks to all the officials who so kindly gave up their time on Saturday and Sunday, and in particular those who had the difficult task of calculating the distances. In fact, it seems impossible to single out individuals, as the timekeepers, range-finders, cadets and volunteers from among the general public all deserve high praise for their efficiency and willingness to assist. One and all gave a fine picture of British sportsmanship.

With our joint thanks and very kind regards,

Yours sincerely,

(Signed) MATHIE MASSENET,  
fm

(Signed) PIERRE MASSENET.

second place, as, under the conditions, distance is measured in metres, one point being scored for every metre travelled, whilst duration is scored as one point for every fifth of a second. (Remember this when considering the duration figures in the list, and divide by five to get the duration in seconds).

Apart from this flight, as will be seen in the list, we had no comparison with either the French or German teams, and I think the majority of us felt it rather a hollow victory. However, the fact remains, and our thanks are due to Mr. Cox for pulling the old country out of the depths.

The final results were eagerly awaited on the field, and much cheery and witty chatter we heard in the interim. At last Mr. J. C. Smith—to whom at long last I hand out an unqualified bouquet!—called for attention, and announced that, subject to recheck, etc., "France had won, with a total score of 25,278.05." The enthusiasm was terrific, our French friends truly letting themselves go. (Earlier in the day, M. Guillet had been tossed in a blanket in honour of his fortieth birthday, which coincided with his visit. I don't know whether this was a new experience for him—if not, I am sure he thinks the English madder than ever!)

Then came the unexpected news that England was second, 800 odd points behind, and Germany third only 400 points behind us. The Germans received a great reception and cheer, and it is my pleasure to record that these chaps were most likeable and sporty, earning the respect of all of us. Herr Schroeter is very popular with many of us here, and his team did their utmost to justify his faith.

Monday morning was brightened by a visit to Kent, the various visitors being the guests of Dr. and Mrs. Thurston, for cocktails at their beautiful country house at Bidborough. Lunch was taken at a real old English Inn at Penshurst, where Lord De Lisle and Dudley presided, and welcomed the foreign teams, etc. It was strange indeed to hear German, French, and Yugoslav songs in this atmosphere. Following lunch, his Lordship personally conducted the visitors over his wonderful old

home—Penshurst Place. This must surely have given our visitors a taste of the England we love, and will be long remembered.

And so to the final item—and what an item! As guests of our beloved Lord Wakefield and the S.M.A.E., over three hundred people sat down to a dinner at Grosvenor House. With Lord Wakefield in the chair, and distinguished visitors in Sir Kingsley and Lady Wood, Col. Moore-Brabazon, H.E. the Yugoslavian Minister, etc., a brilliant affair was witnessed, long to be remembered by all who were in attendance. Lord Wakefield's speech is published here in full, and I would only add that, to many of us, meeting our "guardian angel" for the first time, the impression was that instead of a hard-headed business man, we found a gentleman the very soul of kindness. I trust he was amply repaid by the expressions of gratitude and goodwill paid him—the singing of "For he's a jolly good fellow" was good to hear—and the enthusiasm truly international.

Many were reluctant to leave, and the night finished with songs of all nations! Swiss songs, German lieber songs, and even the "Lambeth Walk." It was a scream to hear the "international Lambeth Walk," lead by Guillet and Rushy, the latter also tickling the foreigners with a rendering of "The Old Sow." Yes—I said rendered!

### KING PETER CUP COMPETITION, 1939

#### FINAL PLACINGS.

				Points.
1.	France	...	...	25,278.05
2.	Great Britain	...	...	24,891.1
3.	Germany	...	...	23,974.65
4.	Yugoslavia	...	...	22,962.84
5.	Holland	...	...	16,959.675
6.	Switzerland	...	...	16,828.00
7.	Belgium	...	...	5,519.4
8.	Denmark	...	...	5,295.575

Detailed results, showing placings of all the teams, are printed on page 620. Viscount Wakefield's speech is published in full on pages 612-3.

Top (left to right) The Swiss Team. Some of the Dutch models. The Yugoslavian models. (Bottom) Mons. Chardard with his model, with Mons. Guillet studying last month's "Aero-Modeller." (Centre) Reynolds, of Great Britain, with his glider, and on right, Jorgen Nissen, of Denmark, with his glider!







(Top left) Viscount Wakefield receiving an Album of Photos taken at last year's competition. Lady Kingsley Wood and Dr. Thurston are also in the picture. (Right) Sir Kingsley Wood making his speech. (Bottom left) Lady Kingsley Wood presenting a cup to Flt.-Lt. R. N. Bullock, leader of the British Team, which was second. (Right) Bob Copland presents a model to Viscount Wakefield.

## SPEECH OF DR. THURSTON, PRESIDENT OF THE SOCIETY OF MODEL AERONAUTICAL ENGINEERS

YOUR EXCELLENCIES, MY LORDS, LADIES AND GENTLEMEN,—This is one of the proudest moments of a life spent in the service of Aviation. It is my privilege to propose the health of our Patron, Lord Wakefield, and to endeavour to render to him the gratitude and homage of all who are concerned in any way with the science and sport of aero-modelling. It is no mere accident, still less is it lip-service, to say that the name of Wakefield is associated with every aero-modelling activity from the time that one's interest is aroused by first attendance at a flying meeting, or by the thrill of first attempts at model construction, right up to the time when participation in a large international gathering enables aero-modellers to play their part in maintaining that most precious of all gifts, which is PEACE.

Lord Wakefield is not only a man of wide experience and great knowledge: he is also the possessor of that wisdom which transcends knowledge and experience. He was among the first to realise that, while transport is the life-blood of modern civilisation, aviation is the heart of the circulatory system. He was the first to realise that model aeronautics is the spear-head of growth and development of aviation. It is the first line of attack on problems of research, and it is the first line of defence against forces which tend to use aviation for the disintegration and destruction of modern civilisation. Those

who have been privileged to attend this, or other international meetings, made possible by our patron, know that the understandings and friendships there made by aero-modellers are some of the surest antidotes to distrust and suspicion.

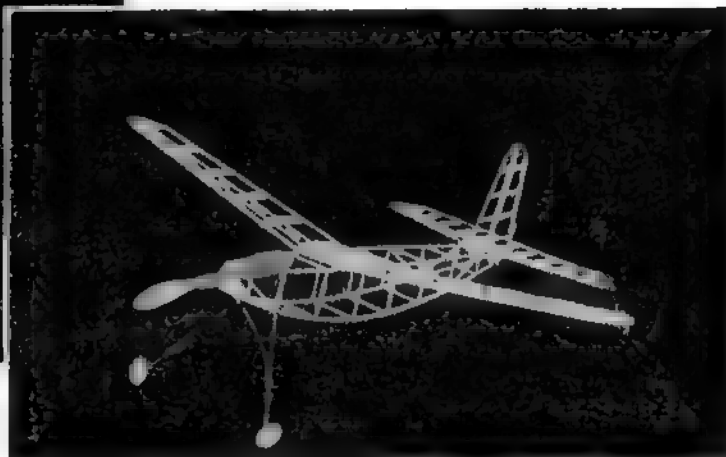
Last year the first competition was held for the King Peter Cup. Our patron enabled a British team to attend, where it was abundantly successful. This year our patron makes it possible for us to entertain challenging teams. Thus he has linked the King Peter Cup with the premier cup of the aero-modelling world, which bears his name. It is symbolic that the two sponsors represent youth and age, royal inherited responsibilities on the one hand, and great personal initiative and resource on the other, and that they both represent the same ideal, although separated by the wide geographical range.

Lord Wakefield is our host to-night. The presence of his distinguished guests, particularly the Secretary of State for Air, gives public recognition to a movement which has developed in this country solely by private enterprise, backed by the public-spirited generosity of Lord Wakefield. By his own presence he has set the seal on aero-modelling as a world force. Long may he live to see the results of his works and be surrounded by the grateful homage of the aero-modelling fraternity he has helped so greatly.



**"CLUB" JUNIOR—  
"WHITE WINGS"**

Kit Supplied by the Model Aerodrome  
144 Stratford Road, Birmingham



Report by OUR TEST PILOT

I HAVE always been fascinated by kits of models designed by the Model Aerodrome, because they give them such pleasant names—"Miss Bluebird" and now "White Wings." Names such as these, to me at least, indicate a lightness, or perhaps a delicacy, in the design of a model which, if it is to come up to expectations, must be a "good looker" as well as a good flyer.

So far as I am concerned, "White Wings" does not disappoint, as will be seen from the photos above; the design is essentially simple and straightforward, yet pleasing to the eye.

The kit is well put up, and contains all material of good quality. The propeller is supplied completely finished, and is provided with an 18 s.w.g. shaft which runs in a brass tube bearing, the thrust being taken by a "Drome" ball-bearing thrust race. The front end of the shaft is preformed into a loop for attachment of a winder, and the end is turned down to form a driving peg in the propeller. Thus no freewheel is provided.

All wing ribs are clearly printed on high-grade balsa, and ample tissue, cement, dope, etc., are provided. A neat little pair of white wheels make a change from the usual black. They are 1 in. in diameter and of the streamlined type.

The fuselage is built from  $\frac{3}{8}$  in. square balsa, and is constructed in the usual manner. The trailing edges of both main wing and stabiliser are straight, whilst the leading edges in both cases are tapered. The top of the fin and all four wing tips are formed from  $\frac{1}{8}$  in. diameter cane.

The undercarriage is very simple, and whilst permanently attached to the fuselage, is so designed that it possesses a good degree of flexibility combined with strength.

A full-size plan, and a very nicely printed sheet of

instructions are provided in the kit, with the aid of which the model may be well built up by the beginner. I liked the really detailed instructions as to how the motor is to be arranged, and the full particulars as to number of turns to be put on. "The motor will stand 1,000 turns on its fourth wind-up. To get these turns it must be stretched five times its length whilst 750 turns are put on, coming slowly in whilst winding the last 250." Now that's what I call a sensible instruction. Four strands of  $\frac{1}{16}$  in. flat rubber, each 18 in. long, comprise the motor. After carefully lubricating with "Drome" lubricant, and following these winding instructions, I got my 1,000 turns—and some flying!

There is little point in describing the hand-launched performance as compared with the R.O.G., since the latter is to all intents and purposes non-existent. I suppose really the model *does* run along to take off, but since this "take-off run" consists at most of inches the performance compared with the H.L. is similar.

The model is, of course, very light in weight, but that is not to say at the expense of strength; but undoubtedly its long glide is due to the low wing-loading.

It would be idle to claim that this was the perfect model any more than any other model I have tested, but certainly I have no criticism to make about "White Wings." "She" is good-looking, a simple and easy model to build, and an easy one to trim and fly. On an ordinary day, without thermals, 1,000 turns can be relied upon to get any good model into the sky—it certainly gets this model up. The makers claim a height of 300 ft. without thermals. I should say that was a conservative figure—anyway, flights of two minutes and more should be quite common. The model is 24 in. span and 18½ in. in length, and the fuselage cross-section (at the greatest measurement) is 2 in. square.

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The English Kit that is the talk of all enthusiasts

## THE FAIRY FACULA

**Specification.** Span, 4 ft. 4 in. Chord, 7 in. Length, 38½ in. Weight, 8 oz. Power, 12 yds. 3/16 in. rubber.

**The kit contains:** Full size drawings, giving constructional details and three-quarter views; ready cut wing ribs; strip and sheet balsa, coloured tissues, dope, cement, shaped prop, blank, wire, bamboo, birch dowelling, rubber, etc. Price 13/- carriage paid.

## The New "CUSTOM CAVALIER"

9 ft. Wing span, Simplified Monocoque.



Nearly every model builder dreams of the day when he owns and flies a Berkeley Custom Cavalier. 9 ft. wing span, simplified monocoque construction for 1 to 1 h.p. engines. The drawings for this kit show particulars for fitting a Brown Junior Engine.

**Specifications.**—Wing span 9 ft.; chord tapering from 16 in. to 10 in.; overall length 67 in.; weight ready to fly approximately 6½ lb. Printed balsa, ply, silk, cement and clear dope. Price £3-7-6 carriage paid.

## THE "CAVALIER STANDARD"

A model of similar appearance to the Custom Cavalier, but with a wing span of 6 ft. This plane, will out-climb anything of equal power. You have to see it perform to appreciate it.

A dry kit less power plant and wheels, £1-10-6 carriage paid.

## EVERY BERKELEY GAS MODEL KIT INCLUDES:

1. Full size plans with pictures and three-dimension sketches of the construction.
  2. All wooden parts clearly printed out.
  3. All balsa strips and blocks cut to size and properly graded for strength.
  4. Special steel wire for landing gear.
  5. Hardware. Metal fittings and ignition accessories.
- Everything is included to complete the model exactly as pictured with the exception of the power plant and wheels.



## THE "BABY GNOME"

HOLDS THREE CLUB RECORDS

A scientifically constructed model, incorporating the very latest knowledge of balsa-wood construction and design. Its extreme light weight, coupled with surprising strength, make it an ideal duration model for those who do not require a large model. Wings, tail, under-carriage and propeller are detachable for transport. The complete kit includes all necessary stripwood, dope, cement, covering, rubber, bamboo, special propeller block, light weight balloon celluloid wheels, wire hooks ready made, etc., and a full-size working blue print. Span 28 in. Weight 1½ oz.

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	...	Model lost on 2nd flight.
	...	Average 2 min. 40-6 sec.

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King Peter Cup, Team ...	...	Best flight 10 min. 12 sec.
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	...	4 min. 45 sec.

As agents for Zaic's Year Book, we have just heard that the next Year Book will be 1939-40. It is being held up until after the American Nationals and the Wakefield Cup competition in order that the very latest designs and aerodynamical information may be incorporated. As Frank says, "I have finally decided to write a large and thick Handbook on Model Aeronautics, and since I can just about handle one book a year, I thought it best to keep the year continuance by combining the two years." The next edition of the Year Book is due in England in October, not earlier, as he is working during July and August incorporating the Wakefield models. Meanwhile, we are still able to supply a very limited number of 1937 or 1938 Year Books (the latter being the current edition) at 4/- each. These are obtainable from any dealer.

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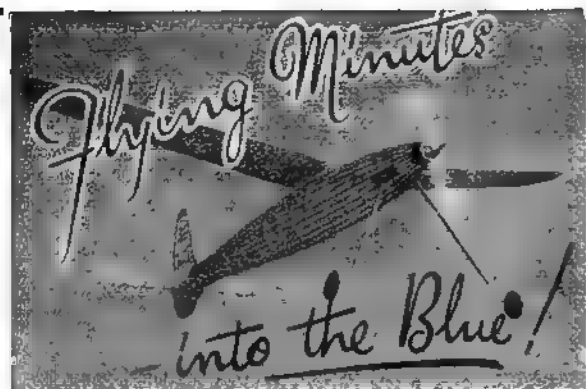
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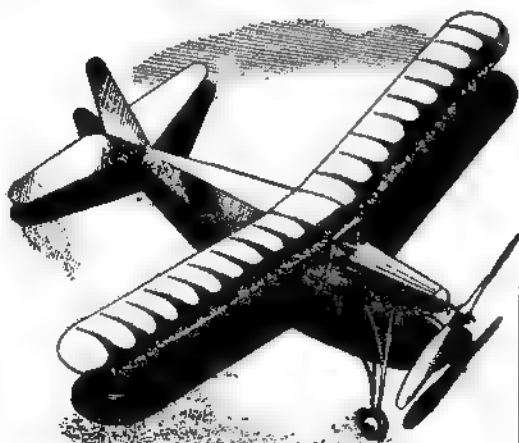
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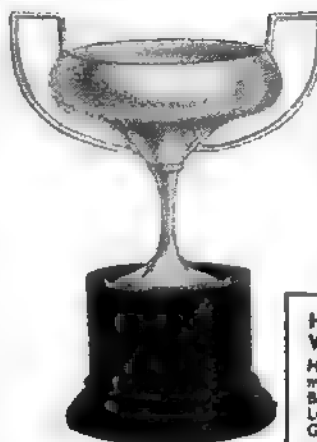
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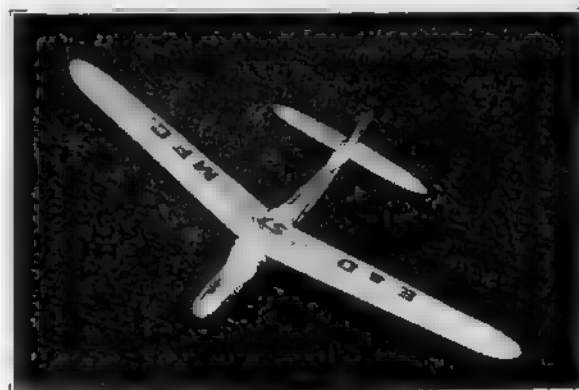
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# RADIO CONTROL FOR PETROL PLANES

By C. R. JEFFERIES

**N**OW that power-driven model aircraft have reached the high state of reliability and efficiency they have, anyone of reasonable ability can make a model from a kit of parts or a published design, fit one of a choice of excellent engines, and know it will fly. The time when we waited for time, weather, the engine to start, and the model to fly to coincide, has past. However, with all this development there still remains the snag that a model aircraft when flying is an uncontrolled projectile; and no matter how perfect and consistent in performance, sooner or later some adjustment in the air will be necessary.

Broadly speaking, there are two methods. One is to use a beam of light to control a photo-electric or solenium cell and its associated amplifier and control gear mounted in the model. This scheme is impracticable, as control is possible only over a very limited range. The other scheme is to use radio. This is entirely practical, and with comparatively simple equipment reliable control over a mile or so is possible. This is ample for our purpose. This series of articles will, therefore, deal with the design and construction of suitable gear, inexpensive in first cost, and the construction and operation well within the capabilities of anyone who has sufficient ability to build a petrol model.

It is fortunate that of recent years, while we have been busy gaining experience in the model game, the radio industry has very obligingly developed for use in midget portable receivers a range of midget valves, components, and batteries, and it is now possible at comparatively small expense to build a suitable receiver and control gear which, complete with all batteries, weighs under 8 lb., and in dimensions would be built into a space about 6 in. cube or its equivalent.

Such a receiver is well within the carrying capacity of many existing single-engined machines. My own model, of which details will be given later, is a perfectly orthodox high wing monoplane, 9 ft. span, and powered by a Brown Junior 9 cc. engine. Its all-up weight, with all the radio gear, is between 8 and 9 lb., and on full throttle the model will R.O.G. with ease. I mention this in passing, as the average individual seems to have the impression that a radio control model must be of huge dimensions, and powered by a large multi-cylinder engine. I personally do not think it will be long before the gear will be reduced in weight to about 1 lb., and be suitable for all but the smallest models.

So much for the introduction, now for the problem. The equipment may be broadly divided into four separate sections:—(1) The transmitter. (2) The receiver. (3) The control gear. (4) The model.

It has often been suggested that for simplicity and light weight a spark-transmitter and a coherer receiver are all that is required. Anyone making such claim shows a sad lack of knowledge of the subject. This method might have proved of use years ago in the control of slow-moving model boats, but it is entirely impracticable in a fast-moving model aircraft. In addition, it is illegal to use a spark transmitter nowadays, due to the interference it would cause to broadcast listeners over a wide area. So please don't do it!

Briefly, the principle I am using is to use an ultra-short wave continuous wave transmitter working on 5 meters, and obtaining its power from dry batteries and accumulators. Remember, of course, that it will be used in the middle of the flying ground right away from the electric light mains. This transmitter is intended to send a pure continuous unmodulated carrier wave, and is a very simple affair indeed.

The receiver fitted in the 'plane is a three-valve set consisting of a 5-meter super-regenerative triode detector valve, a triode low frequency amplifier valve, and an output pentode used as a control valve. In place of the loudspeaker there is a sensitive relay. To explain how the receiver works I am afraid I shall have to start talking technically. It is well known that a super-regenerative circuit generates a loud rush noise when not receiving a signal. This rush noise is amplified by the low frequency stage, and is used to generate a voltage across the grid leak of the output pentode. This has the effect of biasing the valve, and reducing the anode current to a small value. (In the case of my receiver about 5 milli-amp.). Now, when the transmitter is switched on, the incoming carrier wave stops the rush noise of the super-regenerative valve, removes the voltage across the grid-leak of the output valve, and the valve, relieved of its bias, immediately takes more anode current. (In my receiver, about 8 milli-amperes). This current is ample to pull over a sensitive relay.

There is a modification to this method of operation, and that is to keep the transmitter switched on all the time, and to modulate the carrier waves with pulses of audio-frequency tone, and to use this audio frequency tone instead of the rush noise of the super-regenerative valve. This method simplifies the receiver slightly, and makes possible a reduction of one valve. It complicates the transmitter considerably, and, more important, it is possible for the transmitter to cause interference to listeners in the immediate vicinity. In addition, for a given power input to the transmitter, the first method is capable of giving reliable control over longer distances. In passing I might mention that in America the 1938 national radio control winner used a simple one-valve receiver, using this system, but his transmitter was of very high power, actually 800 watts, which is thirty times the maximum power the British amateur transmitter is licensed to use! In addition, such a powerful transmitter could not possibly be run off dry batteries.

The control gear is a matter of personal requirements. For a start I suggest a simple solenoid arrangement to pull the rudder one way. With this arrangement the model should be adjusted to fly with torque, and the control used to turn the model against torque. In this way figure of eight flying is possible, and with carefully timed transmitted impulses a wavy straight flight path is possible, sufficient to bring the model in to land right at your feet.

When this has been successfully accomplished, a sequence selector control mechanism may be attempted, which will give left, centre, or right rudder at will.

I will deal with the practical construction of the apparatus in my second article next month.

# THE SOCIETY OF MODEL AERONAUTICAL ENGINEERS

Notes on a Council meeting of the S.M.A.E., held at the Y.M.C.A., Tottenham Court Road, on Wednesday, July 5th.

Dr. Thurston was in the chair.

The minutes of the previous Council meeting were read, and after one or two minor alterations had been made, confirmed.

Dr. Thurston then read a letter from our patron, Lord Wakefield, in which Lord Wakefield stated that he wished members of the Wakefield team to America to be given £10 per head for personal expenses, and also that the Press Secretary should receive some financial assistance during the forthcoming trip to America. For this purpose Lord Wakefield further showed his generosity by enclosing a cheque for £100. The Council expressed its gratitude to Lord Wakefield for his interest in the movement and his great generosity to the Society, and a very hearty vote of thanks was passed. The Council also desired to express its thanks to Dr. Thurston.

Mr. J. C. Smith, the Competition Secretary, then raised a protest regarding certain statements that had been made at the previous Council meeting whilst he, with others, was absent from the room during the election of an official to accompany the Wakefield team to America. The Council discussed the matter at great length, and it was finally decided that Messrs. Smith, Cosh and York should meet and go into the matter in greater detail.

Mr. Cosh then read a letter from Mr. Almond, the leader of the British Wakefield team. This letter stated that owing to business reasons Mr. Almond would not be able to accompany the team, and he desired that the Council should approve of Mr. Charles Gibson, of the North Kent Club, to take his machine and fly it by proxy. According to the minutes of the Society, any team member unable to fly his own machine may name a proxy flyer, who may, with the Council's consent, act on behalf of the team member. Mr. Smith, the delegate for the North Kent Club, told the Council of Mr. Gibson's past successes, and assured them that he was thoroughly at home with Mr. Almond's model. Various propositions were

placed before the Council and voted upon, the result being that Mr. Gibson was accepted by the Council as the proxy flyer.

The Council decided that the British Wakefield team should be supplied with blazers, the pocket of which should carry the S.M.A.E. badge. These blazers were to be given to the Wakefield team only.

Dr. Thurston then gave a brief report on the F.A.I. meeting in Paris, from which he had just returned.

The Council then discussed the forthcoming King Peter Cup competition, and it was stated that Denmark, France, Germany, Holland, Switzerland and Yugoslavia had all signified their intention of competing.

Mr. Rushbrooke, on behalf of the North-Western Area of England, asked the Council to consider an area trial scheme for the Wakefield Elimination Trials in 1940. Mr. Bell, representing the north-western area of London, and Mr. Gordon, representing the north-eastern area of London, together with all the other delegates, were requested to place this matter before the clubs they represented, as the matter would receive full attention at the September Council meeting.

An application for a rocket duration record of 44 sec. was not passed, as the F.A.I. do not recognize this type of model.

The following records were passed:

Tail-less (A. H. Boys) ... ..	1 m. 24.5 s.
O1P1 Fuselage, R.O.G. (R. W. M. Mackenzie) ... ..	1 m. 54.4 s.
O1P1 Fuselage, H.L. (F. Howarth) ...	1 m. 51.0 s.
Seaplane biplane (tank) (J. Marshall) ...	1 m. 24.4 s.
Seaplane biplane (tank) (J. Morris) ...	2 m. 11.0 s.
R.O.W. (tank) (A. D. Piggott) ...	5 m. 55.0 s.
Seaplane, R.O.W. (J. Marshall) ...	6 m. 24.0 s.
Seaplane, R.O.W. (C. W. Needham) ...	7 m. 17.7 s.
Biplane, R.O.W. (C. W. Needham) ...	7 m. 17.7 s.
Seaplane, R.O.W. (R. W. M. Mackenzie) ...	8 m. 16.8 s.

The meeting closed at 11.20 p.m. with a vote of thanks to the chair.

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# JOB'S LUCK

By ARTHUR MOUNTSTEPHENS

**O**CCASIONALLY Job Wood talks a great deal about high aspect ratio, formulæ, slipstreams, and what not. He doesn't always quite grasp what it is all about, but his models fly for all that.

They are erratic, it is true. The model which at trials astonishes even Job, often fails to function in the competition. He takes it all with a smile.

The Wakefield Trials were still some weeks off when Job assumed symptoms of bringing out yet another wonder. At club meetings he would say scarcely a word, and whenever experts came to address us, his brow would be corrugated in extreme concentration. When two or three of us gathered together over the balsa counter he would carry a far-away look, and always you would see somebody's manual sticking from one of his pockets.

The mysterious pursing of the lips and glint in the eye with which he met our questions told us all we wanted to know. Job was going to astonish the world.

Knowing how much Job did want to go out with the English team my heart ached for him. He may be our club joke, but he is our greatest asset and he's human. But whatever Job put into that model, we all knew pretty well that he wouldn't go. Sadie, his wife, or his bad luck would stop him.

When for three consecutive weeks I did not see anything of him, I decided it was time to call at his house, when I was pretty sure he would be in his workshop. Sadie opened the door.

"Oh, it's you," said she. There wasn't much warmth in the welcome, but she unfroze a little, probably remembering the little incident in which I was responsible for Job's giving up a hopeless fight with violin scales, and returning to the less irritating model aeroplanes.

The tiny smile died on her lips when I mentioned Job's latest model.

"He's been down in that there shed for weeks and all hours," she declared.

"What's a man without a hobby?" I murmured.

"I haven't been to the pictures for months," was her reply.

"But think," I said, "of your reward if Job is able to take you to America."

Sadie snorted. "Who in the heck wants to go to America? I've got two kids to look after."

That settled me, of course.

"If he goes to America," she continued, "we shall go to Margate as usual, and we might be able to enjoy ourselves for once."

"Then there will be some compensation for you."

"He won't go to America. He hasn't even won so much as a china egg cup," Sadie said.

Our conversation ended on that rather pessimistic note, and a moment later I was looking forward to Job's more friendly atmosphere, as I made my way through his neglected-looking garden.

As I entered the workshop Job looked up. A balsa chip hung delicately from his rather large nose. Sawdust lay on his hair, and glue on his spectacles caused him to pull them down to the end of his nose as he regarded me. Job seems to be able to see through glue, when



"Job, in finding the rack with his case, landed the man another nasty crack on the head and shut him up altogether."

studying plans or setting minute nails into position, but anything larger than those need unobstructed vision.

"What do you want?" he said brusquely, as he pushed plans furtively beneath the bench.

"It's about time we saw this model showing us the way to America," I said boldly.

The result of that remark was, as I had anticipated. Job's frown disappeared, and the balsa chip fluttered to the floor as his great nose participated in the general smile—Job's smile, broad and friendly.

"Boy," he said, "I'll have 'em all beat this time."

Out came the plans. His horny thumb began to hover uncertainly over the paper.

"It looks as though the model is nearly ready," I said hastily. It takes Job a long time to propound a theory, especially when hampered by plans.

"Boy, it'll be ready to-morrow. We'll go up early and give it a try out," Job declared.

I need not dwell on the joy of that bright morning when Job's model, with only the two of us as spectators, literally ate up the time with flights, which if repeated at the right time would bring the cup back from America.

I certainly will not dwell on the sight of our return home, when Job tripped up a nurse getting off the tram-car, with that great box of his, and butted the conductor in the stomach with his model case, while he explained to me how he had overcome torque and resistance with methods wholly unintelligible to me.

Job got through the trials that selected our local team with triumph. We began to think that bad luck had deserted him, and that he would go to America. But in London, at the trials proper, he was not so fortunate.

His model disappointed us on the first flight with a sudden decision to come down and skim over the grass of the aerodrome in a manner that was spectacular but

not record breaking. Wind, and an obstructing spectator, played their devastating part with the other two flights. Job was knocked out.

On the return journey he nearly knocked out, with his case once more, a small child; he butted the back of a portly gentleman offering a lady tea on the train, and caused the said tea to make a forced landing in her lap; while all the time he continued to explain just how next year he would find something to counteract the tendency of models to fly on the ground, wind, and interfering spectators.

And while the gentleman of the tea, with red face and waving arms, remonstrated with him, Job in finding the rack with his case, landed the man another nasty crack on the head and shut him up altogether.

As we parted that night, Job said solemnly, "I'll get that blinking cup yet." Which, as the trials were over, and the team picked, seemed to me quite impossible.

A fellow named Rainbow, from our club, had succeeded in getting a place in the England team with a model that Job's would have beaten, given luck.

Here it was that Job showed his great sportsmanship.

Rainbow mentioned the night before his departure for America that he had more than a dozen cases to take with him. He did not quite know how he would manage the supervision of them at the station, and with his usual friendly grin, Job offered to help.

Three or four of us went down to the station carrying cases, and after we had seen Rainbow safely away, Job sighed as he watched the retreating train, and then took me into Woolworth's and bought his kiddie a sixpenny model. That is just how you would expect Job to take defeat.

We did not expect Rainbow to bring back the cup. He was up against 'planes that had put up far better shows than his at the English trials. There was also, of course, the tremendous competition of the other countries. But you never know.

Rainbow had promised to cable our secretary the day before the competition, and also on the great day itself. We went round to the secretary's house the first day, Job and I, and a few more.

You could have knocked me down with a balsa chip when the first cable came. We know Rainbow to be a bit erratic, but we were not prepared for the news that he had smashed his model in trying some insane refinement that he had discovered on the way out. He was, however, engaged on building a new model, which he assured us would be ready in time.

Job smiled when he heard the news. With a sudden departure as though he had a 'plane to catch, he said "Cheerio. See you here to-morrow."

We assembled the next day, some time before the cable was expected. There was no exciting anticipation about Rainbow's effort, but we were hopeful that some lucky Briton might bring it off.

It came at last. The secretary opened the message. He went white as he read to himself, and then we went white as he read it out to us.

It took Job's explanation to convince us that we were not being subjected to a giddy joke. He had sent Rainbow a cable the day before.

Rainbow had won the cup with Job's model.

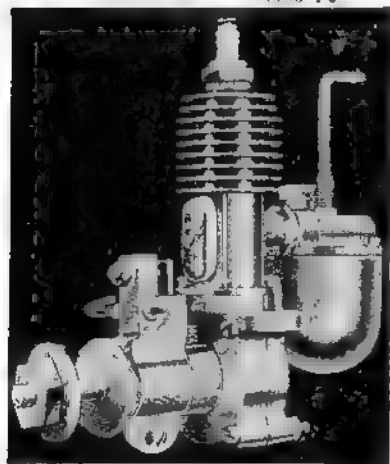
"Well," said Job modestly. "I thought as I was helping with the cases there was no reason why my model shouldn't go out, in case it might be wanted. One more case made no difference at all."

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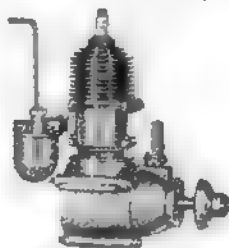
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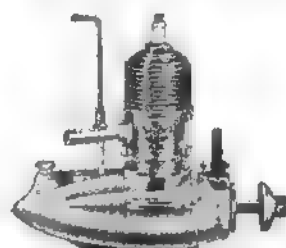


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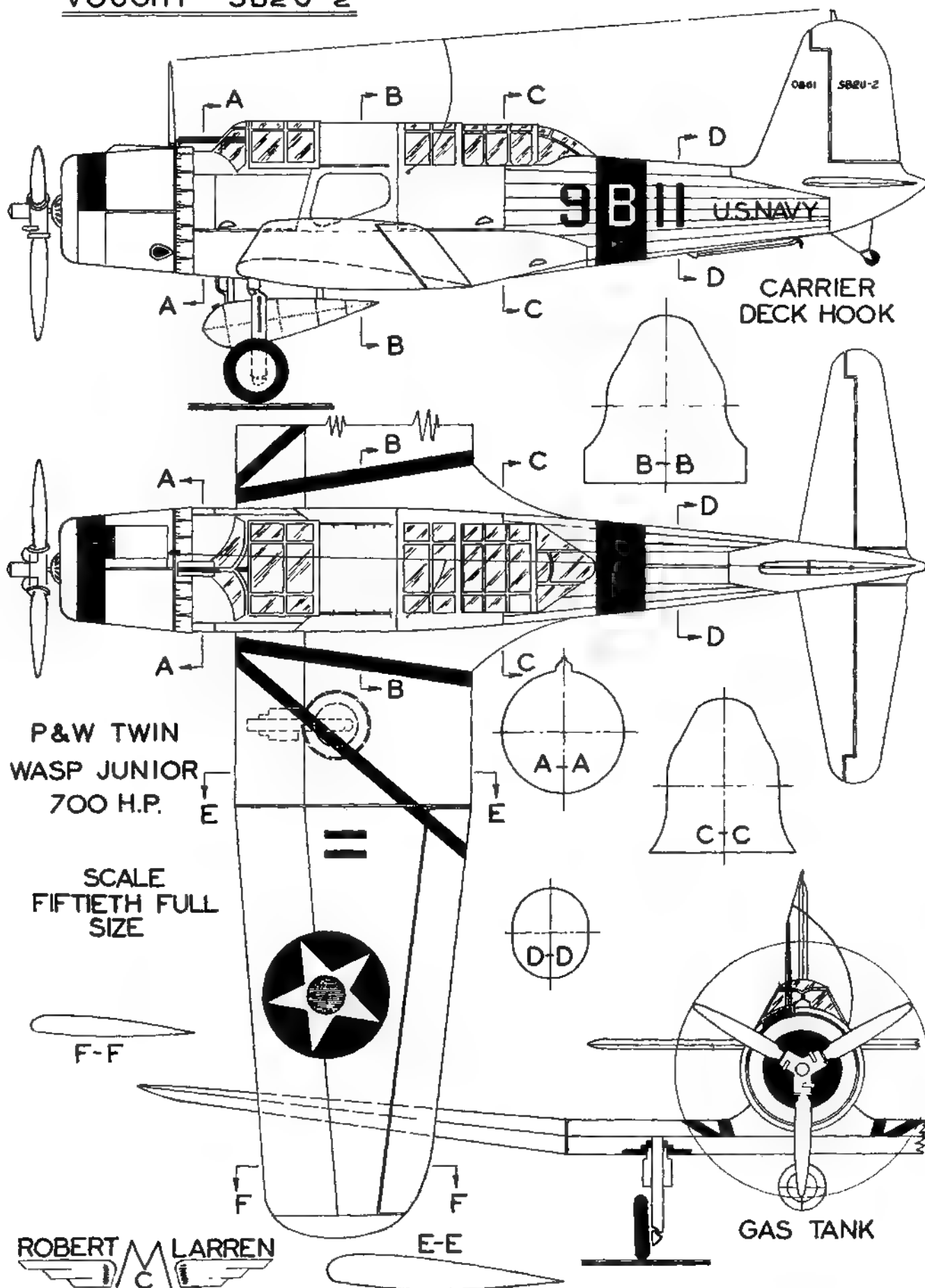
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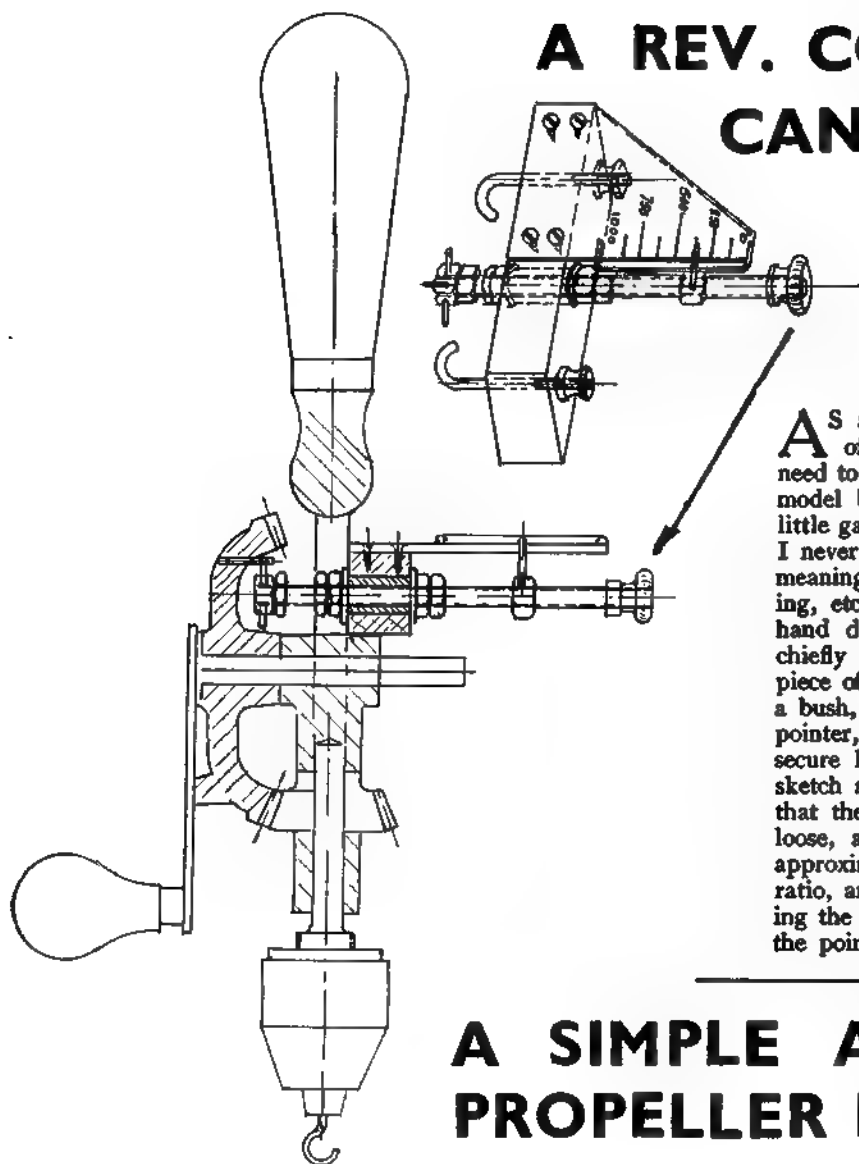
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## A REV. COUNTER WHICH CAN BE FIXED TO A HAND-DRILL WINDER

By J. YOUHILL



AS all other keen modellers, I have found the need of a simple rev. counter most urgent. There is no need to mention the many disappointments in a promising model being wrecked by a miscount in winding. This little gadget took me about an hour to construct, and now I never fear the job of putting on the turns or the well-meaning questioner who wants to know about wing loading, etc., halfway through the wind. Any of the usual hand drills can be adapted, and the material used is chiefly wireless odds and ends; the main spindle is a piece of 2 BA screwed rod with lock nuts and washers, a bush, 1 mm. wire for the star wheel, driving peg and pointer, metal scale plate. The  $\frac{1}{2}$  in. hook screws will secure hard wood base to the hand drill frame. The sketch should be self-explanatory, but it might be noted that the nut with the pointer attached should be fairly loose, and the scale, if marked  $1\frac{1}{2}$  in. long, will give approximately 1,000 turns if the brace is of the 4 to 1 ratio, and the star wheel has six teeth, as shown. Twisting the knurled nut at the end of the spindle will return the pointer to zero ready for the next wind.

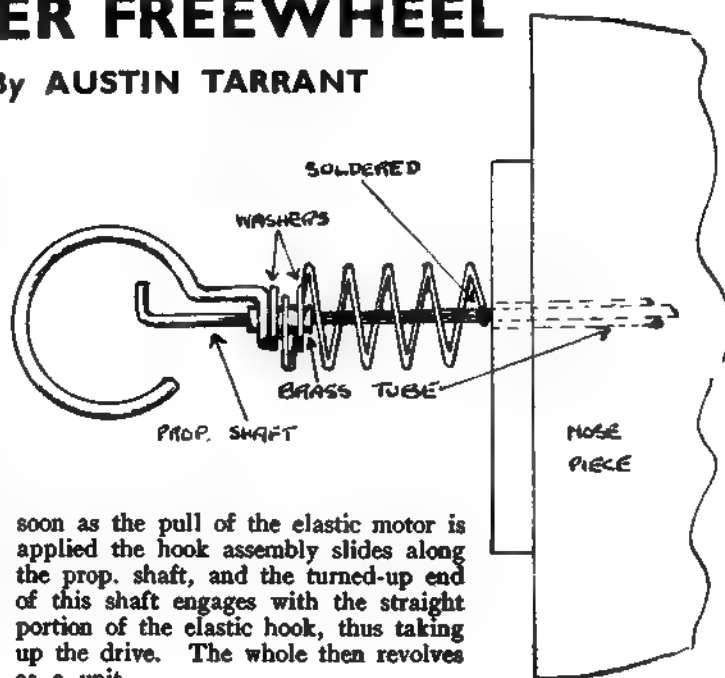
## A SIMPLE AND EFFICIENT PROPELLER FREEWHEEL

By AUSTIN TARRANT

THE sketch shows a propeller freewheel which is fitted behind the nosepiece, and is out of sight. This type of freewheel can be employed where a spinner type prop. is used, and the only additional friction set up when the prop. is freewheeling is that between the loop on the spiral spring and the washers on the brass sleeve. This is small enough to have no effect on the gliding abilities of a model, for the spring is not under tension or compression while the freewheel is in use. It is under tension when the model is powered, but this has no ill effect.

It is simple to make, and consists of a short piece of brass tube to fit the selected gauge of prop. shaft soldered in a loop formed in the end of the elastic hook with two washers also soldered to it. A loop on the end of the spiral spring fits into the recess thus formed. This part could be made from solid, if a lathe is available. This hook assembly slides freely on the prop. shaft, but the prop. is fixed to the shaft. Make the spring only just strong enough to hold the hook in the correct position.

The sketch shows it in the free-wheeling position. As



soon as the pull of the elastic motor is applied the hook assembly slides along the prop. shaft, and the turned-up end of this shaft engages with the straight portion of the elastic hook, thus taking up the drive. The whole then revolves as a unit.



# THE 1939 NORTHERN RALLY

Report by "CLUBMAN"

*Dr. and Mrs. Thurston examining Roy Johnson's model. Clubman's caption for the lower photo is "good girl!"*

MANY of this year's big meetings have been held under extremely difficult conditions, and the 1939 Northern Rally, organised by the Lancashire Model Aircraft Society, was no exception to the rule. As Rushy said: "Every blinking thing that could go wrong *went* wrong." However, in spite of many handicaps, the meeting was run off with considerable success, with a total number of actual competitors of 268.

With their 1938 experience to go on, the Lancs members had got down to organising details very early in the year, but all preparations were almost scotched at the last moment by the termination of permission to use Woodford Aerodrome for further model flying. This was occasioned by the enormous increase in normal aerodrome activity, both military and civil, brought about by the present intense air programme. However, after long proceedings with the authorities, permission was granted to hold the rally on the published time and date, and arrangements were pushed ahead.

The first hitch of the day occurred when, after rigging up the competitors' enclosure, marquees, etc., orders were received to move the position of the equipment to the opposite side of the aerodrome, which unfortunately meant that models were immediately flying outside the aerodrome—and lead to hitch No. 2. Many models landing on the adjoining farm caused the owner of the ground to protest, and, unfortunately certain of the "trespassers" did not use the tact they might have done, which, of course, did not ease the situation.

Hitch No. 3 was the failure of the public address system, and the lack of this was felt more than, perhaps, anything else, it being obvious that to conduct a meeting of such proportions is impossible without some means of adequately addressing the concourse. On top of all this there was the 1939 speciality—rain. Periodically throughout the day this wetness came down in bucketfuls, and the way in which the various competitors and officials stood it was an amazing insight into the enthusiasm of the aero-modelling fraternity.

Altogether, five main events were held, with two supplementary items in a team and championship classes. Previous meetings have proved the popularity of the general duration events, and this time an "average of two" hand-launched items lead the programme, this running concurrently with an R.O.G. event of the same requirements. 198 brave "fliers" entered the H.L. event, and 146 the R.O.G. class—and it is a matter of

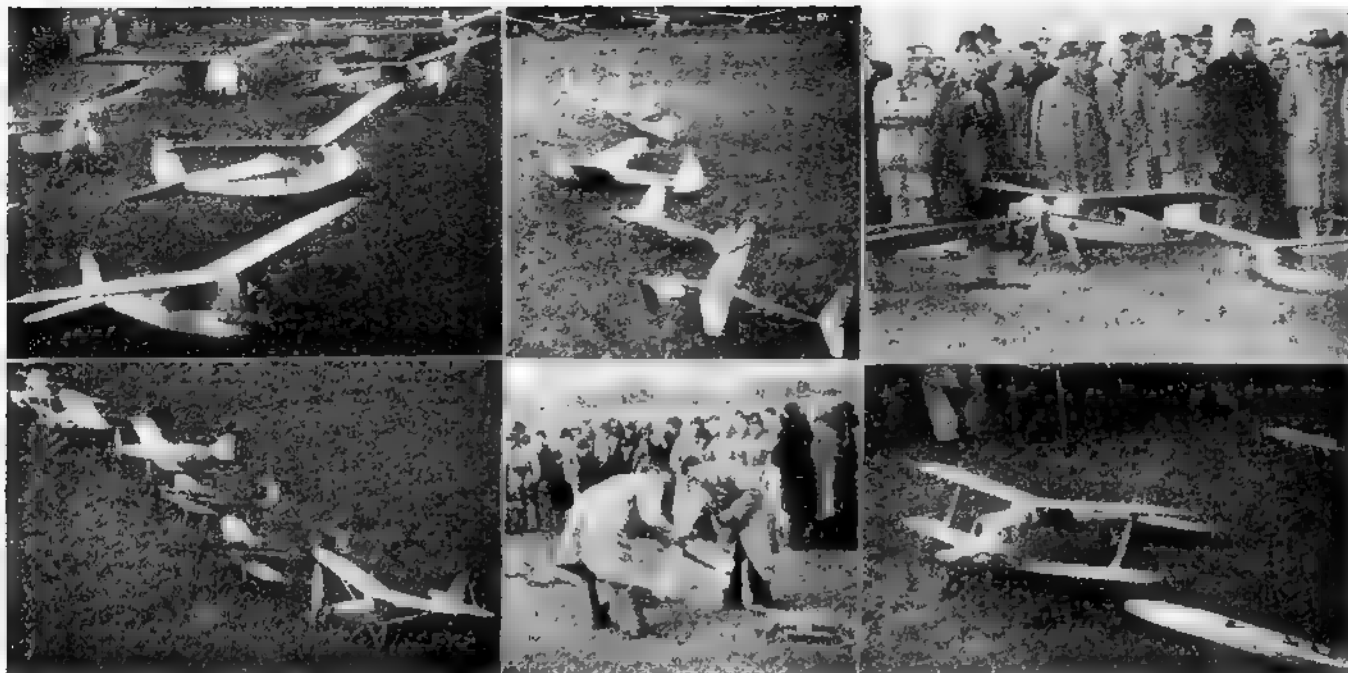


conjecture just what the entry would have been had the weather been a little kinder.

Under the direction of Rushy, the organisation had been thoroughly considered, and the method used to deal with the running of the competitions was a combination of last year and the modified French system used so successfully at this year's Wakefield trials. Coloured slips were provided for each flight, and it was impossible for anyone to claim more than their allotted number of flights. These, combined with a set of very explicit charts, made it almost impossible for anything to go wrong, and one was able to tell immediately how the events were progressing.

Continued showers held up the commencement for some time, but eventually there appeared one of those rare breaks in a leaden sky, and for a period of 95 minutes there was a hot sun, and thermals galore. In this brief respite a matter of nearly 800 flights were timed, and this says much for the whole-hearted co-operation of the visiting timekeepers, etc., without whose help the meeting would have been seriously handicapped.

Flights of 5, 6, 7, 10 and more minutes were being made, being capped by one of 17 minutes 57.5 seconds by Dennis Lees, of Halifax. This flight, coupled with another of nearly three minutes, won for him the hand-launched event, and with another very good effort in the R.O.G. class, won "THE AERO-MODELLER Championship Cup." This was a very popular win, and pleased



Top (left to right) Some of the petrol 'planes, and middle, some of the rubber-driven models, in the enclosure. (On right) How the crowd were dressed! Note the rags over G-A DAR's engine, to keep the engine dry! Bottom (Left and right) More models in the enclosure, and centre, Messrs. Houlberg and Russell judging models.

the organisers very much, for, as was remarked, "It is a good thing for a junior to put it across the seniors on occasion."

Official recognition was gained in the presence of Dr. and Mrs. Thurston, and Mr. and Mrs. Houlberg, all of whom did yeoman service in the running of the events. After many attempts to get the Concours Classes completed, they were finally judged in pouring rain, Dr. Thurston and Mr. Stott adjudicating in the Petrol and Duration Classes, and Messrs. Houlberg and Russell in the Scale Section. Many fine models were on show, and the winners fully deserved their successes.

The scale flying class saw some very good flying indeed, the eventual winner being Mr. F. Bailey, with a time of 59 sec., closely followed by Mr. Tindall, also of the Lincs Club, with a time of 55.6 sec.

In spite of the ground being absolutely waterlogged, many people walked down the aerodrome to watch the Petrol Class flown off, and their interest was rewarded

by some very fine flying. With an engine run of twenty seconds, some models showed exceedingly good gliding capabilities, especially when considering that by this time lift was practically non-existent. Mr. Wordon (I believe the first London competitor to enter this Northern event) had very bad luck by going just over the mark with his engine run on the second round.

It is impossible to state just how many intending competitors turned up, but I know of many cases where a full coach load of modellers only produced half-a-dozen or so brave defiers of the elements. Given fair weather, I estimate that the total would have exceeded this year's Wakefield Trials, and would have taxed the organisation to the utmost. Under the circumstances, however, it was as well that the numbers were somewhat reduced, enough difficulties being encountered as it was!

The prizegiving was a jolly affair, the duty being graciously conducted by Mrs. Houlberg, who congratulated the winners and all who attended on their courage

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and spirit in spite of the adverse conditions. Rushy, in a few words before the prize distribution, thanked the enthusiasts who had competed, and especially those who had done so much to help. He also said that it was only fair to the members of his own club to state that, under the circumstances, it must be realised that any real competition in the events from the Lancs Club was handicapped, and that it must be left to other meetings for his lads to show their metal.

And so ended a day in which almost every difficulty was encountered, but in spite of all the spirit of goodwill and fellowship was very marked, and gives much encouragement to the further organising of these annual meetings. As one visitor was heard to remark: "It certainly does rain in Manchester, but I'll be blown if it can damp the spirits of these Eskimos!"

### 1939 NORTHERN RALLY RESULTS

#### EVENT 1. HAND-LAUNCHED DURATION (198 entries).

	Average.
1. D. Lees, Halifax ... ..	622.25 sec.
2. D. Halsall, Southport ... ..	317.25 "
3. J. Eiffander, Macclesfield ... ..	317.0 "
4. N. Lees, Halifax ... ..	298.1 "
5. F. Catterick, Southport ... ..	247.25 "
6. K. W. S. Turner, Macclesfield ... ..	211.5 "

#### EVENT 2. R.O.G. DURATION (146 entries).

	Average.
1. A. W. Lancaster, Bolton ... ..	356.25 sec.
2. B. V. Haisman, Liverpool ... ..	195.6 "
3. K. W. S. Turner, Macclesfield ... ..	176.8 "
4. A. Tindall, Lancashire ... ..	168.4 "
5. P. L. Smith, Lancashire ... ..	145.8 "
6. D. Lees, Halifax ... ..	144.06 "

#### EVENT 3. CONCOURS D'ELEGANCE (41 entries).

Class A. Scale.	J. J. West, Warrington.
	T. Rostron, Lancashire.
	C. S. Rushbrooke, Lancashire.
Class B. Duration:	R. F. Parkinson, Windsor.
	N. Lees, Halifax.
	R. Cherry, Sheffield.
Class C. Petrol.	L. B. Crompton, Farnworth.
	A. Brookham, Bradford.
	N. P. Reason, Leeds.

#### EVENT 4. PETROL CONTEST (18 entries).

	Average.
1. D. S. Wesley, Sheffield ... ..	44.2 sec.
2. J. Worden, T.M.A.C. ... ..	40.5 "
3. N. P. Reason, Leeds ... ..	37.0 "

#### EVENT 5. FLYING SCALE (20 entries).

	Average.
1. F. Bailey, Lancashire ... ..	59.0 sec.
2. A. Tindall, Lancashire ... ..	55.6 "
3. C. C. Horner, Lancaster ... ..	41.5 "

#### TEAM CONTEST (12 entries).

Halifax M.A.C. ... ..	1429.65 points.
-----------------------	-----------------

#### CHAMPION OF THE RALLY.

(Holds AERO-MODELLER Cup for the year).

D. Lees, Halifax.

#### LUCKY PROGRAMME NUMBER.

No. 122. Will the holder of this number please communicate with the organisers?

N.B.—All the above received prizes.

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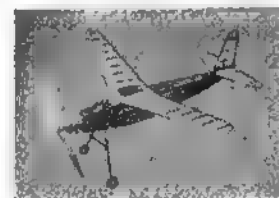


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# STRENGTH IN MODEL BUILDING

By REX YOUNG

**M**ANY model aeroplane constructors build almost entirely for duration, and keep constructional weight to a minimum in order to achieve the maximum flying duration of their models. This policy, however, has often to be paid for in time expended on repairs, as many light models are unable to "take it" in the event of heavy landings in rough weather.

Thus, while the ultra light-weight enthusiast can generally obtain slightly longer durations than the flier whose model is built with an eye to strength, it will not be denied that on a day of heavy weather the former will frequently spend far more time in effecting small repairs to his craft than the sportsman with a model built on "strength first" principles, so that the latter, in all probability, will finish up with a greater number of recorded flights in the course of a day's sport.

Furthermore, freedom from repairs is conducive to a more complete enjoyment of this absorbing hobby, and long life in a model can be an object equally worthy of attainment as that of super-duration in flight.

The purpose of this article, therefore, is to impart a number of hints, all of which are illustrated, whereby extra strength can be built into a model aeroplane—often at a very small cost in additional all-up weight—with the result that the finished model, though perhaps taking a little more time to construct, will stand up to any amount of hard work, and gives its owner many hours of trouble-free flying.

The author does not claim originality in many of the hints given. They are the result of experience, and have been gained from model-flying friends, from observations at sundry flying meetings, and from tips that have been read at various times on the hobby of model-building. Every hint mentioned, however, has been tried out in practice and found to be of excellent value. They are classified under the appropriate heading, and are as follows:—

## MAIN PLANES.

Fig. 1. When setting ribs to the leading edge, cut the notches diagonally in the nose of the ribs, and set as shown. The angle of this cut does not decrease the strength of the rib, and only one edge of the spar has then to be rounded off to the correct contour, which is thus obtained without excessive sanding of the spar.

Fig. 2. When building in the main spars of a wing use the constructional method shown, i.e. a top spar of balsa, and a lower spar of birch. This lower spar will give an admirable rigidity to the wing, and reduce the risk of fracture to a minimum.

Fig. 3. When setting ribs to the trailing edge, notch this only very lightly, and when the ribs are glued in place add small triangular fillets of thin balsa sheet as shown. If the fillets are carefully set this form of construction results in a very rigid trailing edge, and will prevent it from warping.

Fig. 4. An alternative method is shown here; cover each joint with small discs of gummed paper-tape. These should be cut out to about the size of a sixpence and folded in half.

Fig. 5. When joining two wing halves to a centre-section, cement a small strip of cedar-wood to the underside of the leading and trailing edges, as shown. These strips should be cut from wooden pipe-spills, such as one

can buy in small bundles or drums from any tobacconist. They are useful to the model maker for many purposes in the construction of model aeroplanes, and can also be used as splints when effecting minor repairs.

Fig. 6. In place of wing tips cut from sheet balsa (usually cut in several pieces in order to follow the grain of the wood), use a one-piece wing tip of bamboo or cane bound with cotton and cemented to the ends of the spars, as shown in the sketch. This type of wing tip will stand up to much hard use, and is substantially stronger than the sheet-balsa type of tip.

## FUSELAGE—FRONT END.

Fig. 7. When constructing a fuselage of square or rectangular cross-section, use small discs of adhesive paper to strengthen all cross-members at the joints. A fuselage so finished gains appreciably in strength, and the additional weight is fractional. Furthermore, the extra work involved is of a very easy nature; the paper discs (of approximately the same size as in Fig. 4), are merely folded in half and positioned as illustrated in the sketch.

Fig. 8. This shows another method of strengthening the cross-members of a fuselage. Small strips of balsa are glued cross-wise to all the cross-members in the structure. This method will, of course, take more time to complete, but gives exceptional strength, and is worth while, especially where a fair weight of rubber motor is used, as it largely counteracts any tendency of the fuselage to twist under the torque of the rubber when wound.

Fig. 9. When making a nose-block, insert a small disc or washer of plywood at the front and rear ends of the shaft holes. The strength of a rubber motor when wound tends to pull the air-screw washers through the front of the balsa nose-block, and the forward plywood disc will take the strain and distribute this load. The rearward disc will prevent the hook from scoring the back of the nose-block when in the extreme forward position.

Fig. 10. Small press studs can frequently be used to good advantage in the construction of a model. In this case they are shown employed to keep the nose-block in position. The studs are cemented into the structure as illustrated, and the nose-block can then be pressed easily into place. This results in a very strong fitment, and further, no movement of the nose-block is possible under conditions of flight, which is an added advantage.

## FUSELAGE—REAR END.

Fig. 11. In a fuselage that tapers appreciably towards the rear, there is often very little space in which to fit a rear hook for the rubber motor, and it is difficult to insert the motor, for the same reason. It will be found a great advantage if the tail of the fuselage is constructed with a little extra width, and the rear hook and tail-skid built into a small block shaped to fit into the rearmost aperture of the tail. This method is shown in the sketch, and results in an easy access to the rear hook whenever necessary.

## UNDERCARRIAGE.

Fig. 12. This figure shows a good method for fixing a detachable undercarriage. On many types of models  
(Concluded at bottom of page 610).



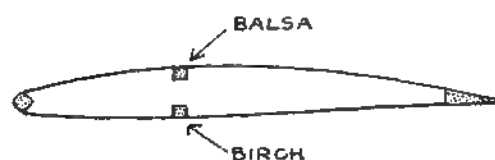
# STRENGTH IN MODEL-BUILDING.

By REX YOUNG.

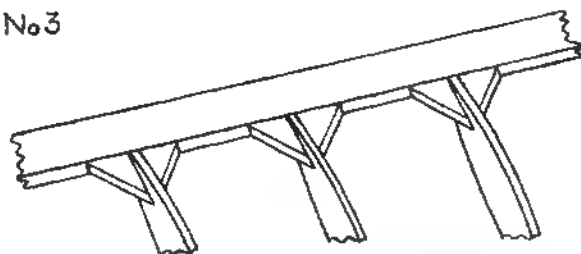
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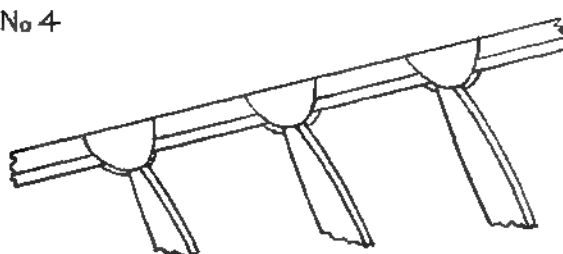
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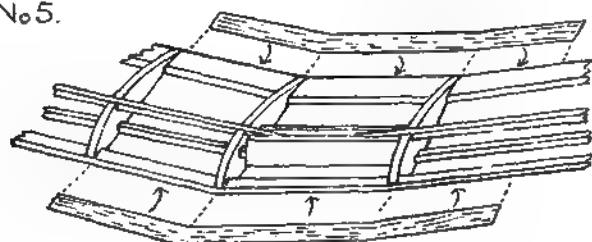
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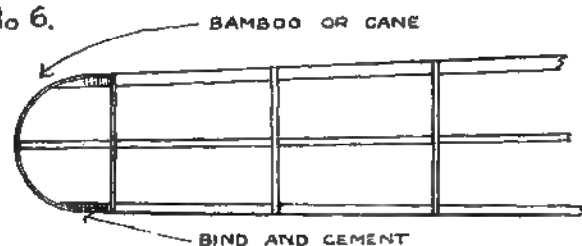
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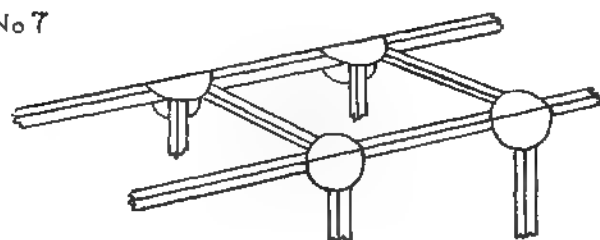
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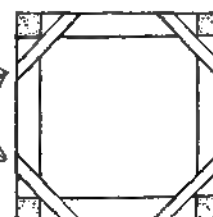


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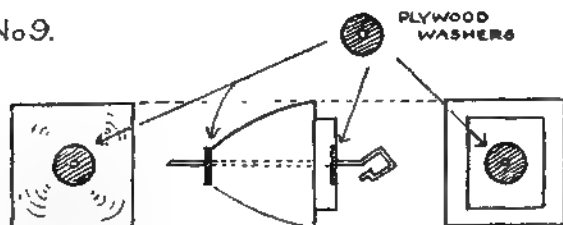


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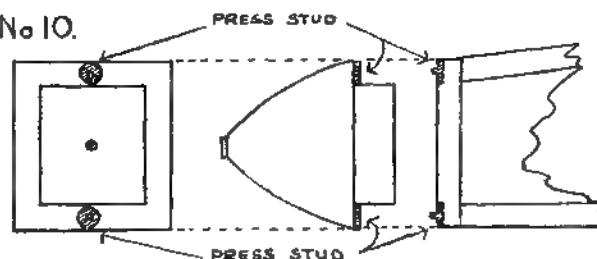
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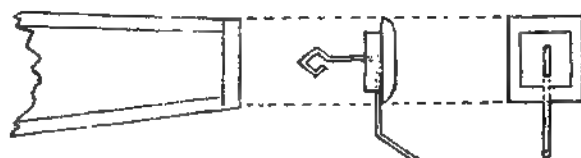
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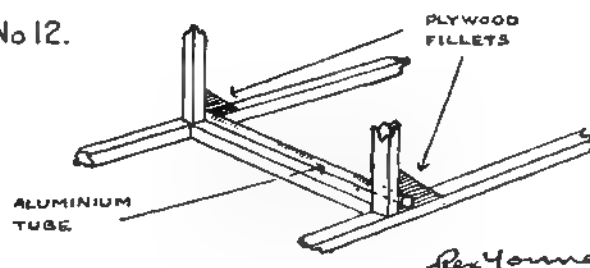
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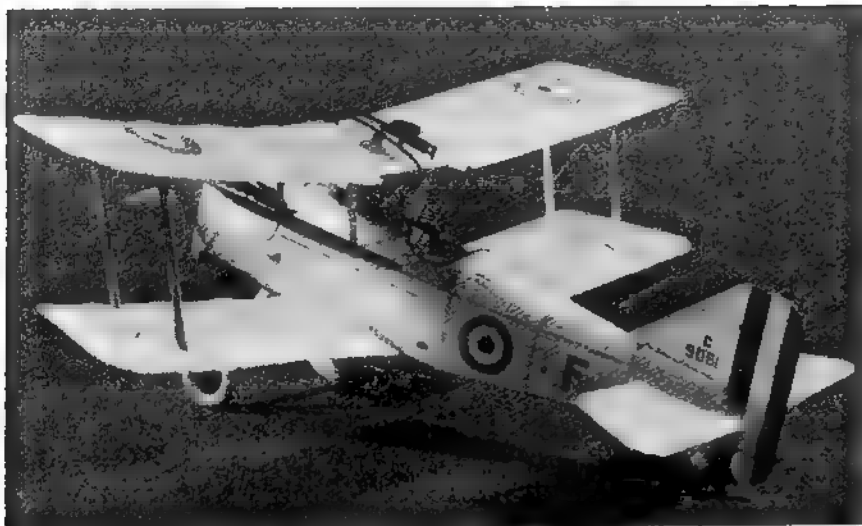
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Rex Young

## HERE ARE SOME OF MODEL

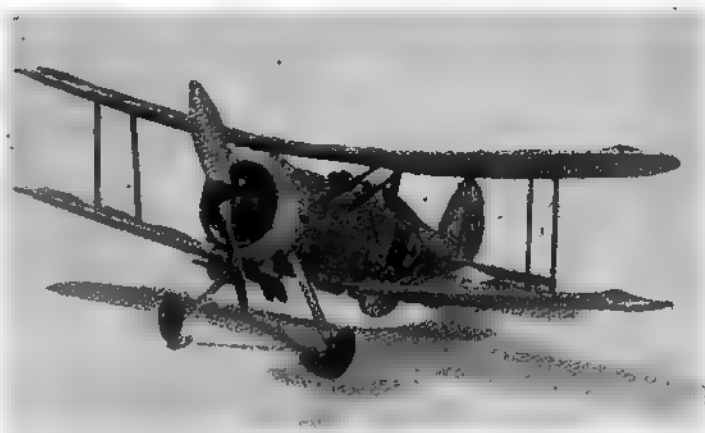
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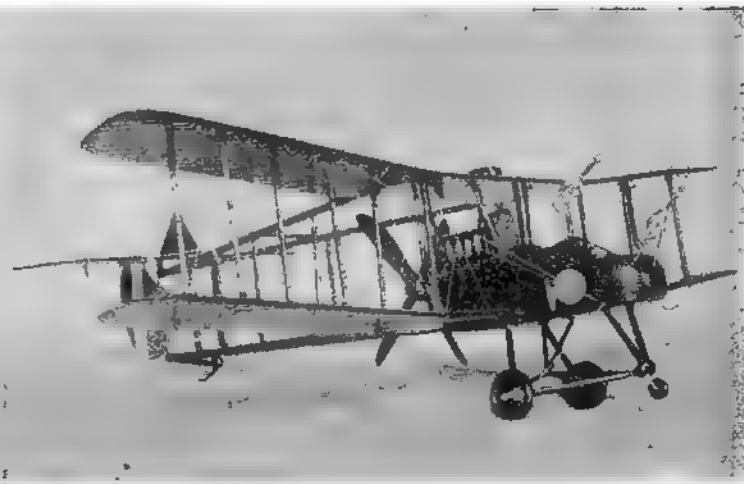
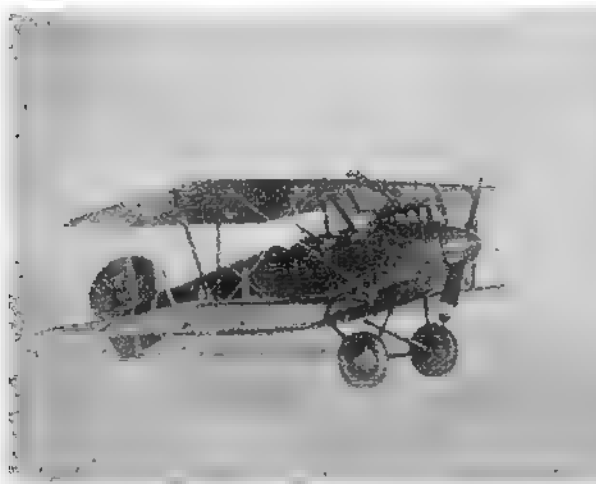
A 22 in. span flying scale model of the S.E.5, built by Mr. W. E. Forrest, of Chesterfield. Weight is  $2\frac{1}{2}$  ounces, and power is 4 strands of  $\frac{1}{8}$  in. flat rubber.

A flying scale model of the Gloster "Gladiator," built from plans published in November, 1938, issue of "The Aero-Modeller," by Mons. Ivo Moreau, of Belgium.

A petrol 'plane designed and built by Mr. H. J. Jewett, of Los Angeles, California. This 'plane has had a duration of thirteen minutes on a motor run of 30 seconds.



An Albatross to  $\frac{1}{4}$  in. scale, and an F.E.2b to one-eighth scale, built by Mr. Thompson, of Middlessex.



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*An Italian model constructed entirely of metal. Note the motor-tube, and the built-up wings.*



*Another model of the S.E.5, built by Master John Symonds, aged 15 years, of Ipswich.*

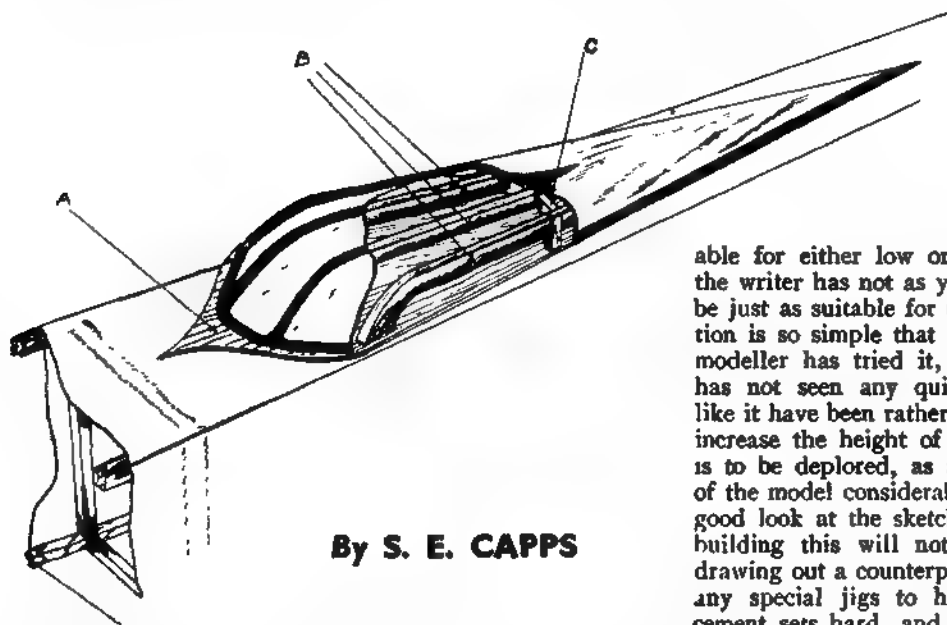
*A silhouette glider of the Armstrong Whitworth "Ensign." Plans for building this fine model will shortly be published in "The Aero-Modeller."*



*Mr. Piper, of Scotland, with a petrol 'plane built from a "Club" conquest kit.*



## A DETACHABLE CABIN TOP FOR HIGH OR LOW WING MODEL AIRPLANES



By S. E. CAPPS

**A**FTER building any straightforward high or low wing model airplane one cannot hide the fact that, with the exception of certain designs, there is a bareness about the front view, inasmuch as the front of the fuselage appears to be unfinished. When one has built a number of models, and has overcome the difficulty of making them fly, one is inclined to take a greater interest in the appearance of the model in the air and on the ground. That this is the case with some modellers can be seen at any collection of model fliers to-day, as the various colour schemes to be seen show that considerable thought has been expended in this direction. There is a big difference between the look of a model fitted with a well-shaped cabin top or a straight plain fuselage top; in fact, one looks incomplete when placed with the other. The writer's models were all without any particular shape, and were all very bare on top, and seeing a semi-scale model one day with an enclosed cabin which rather interested him, he decided to attempt something similar.

None of the models in question were really suitable for the addition of any type of cabin top design, but something had to be done, and the top described here was sketched out after much sorting of possible and impossible shapes. As will be seen by the accompanying sketch the design follows no well-known shape, and is probably more in the nature of an attempt to obtain the desired look, and at the same time keep the cross-section bulk of the fuselage down as much as possible. The rakish low airflow appearance makes it equally suit-

able for either low or low wing models, and although the writer has not as yet fitted one to a biplane it should be just as suitable for that as well. The actual construction is so simple that I expect that more than one aero-modeller has tried it, but up to the present the writer has not seen any quite the same. The few that are like it have been rather deeper in shape, and consequently increase the height of the fuselage at that point. This is to be deplored, as any increase in head-on resistance of the model considerably curtails the flying duration. A good look at the sketch will convince most builders that building this will not call for any elaborate work in drawing out a counterpart to suit one's own machine or in any special jigs to hold the parts together while the cement sets hard, and the cost? Well, the writer's was made from scrap.

The real advantage is in the fact that it can be made detachable, and like this can be used for all of one's models that are of similar size. The bottom plate A is  $\frac{1}{8}$  in. thick balsa wood sheet. The frame of curved stringers B are cut from straight grained balsa wood of sufficient width and thickness for the size one proposes to construct, four of which are cut to the curve shown with the height of the outer two lowered somewhat to give the top a rounded appearance. These are then cemented to the base plate, and if cut correctly no difficulty should be encountered in assembling them in position. The cross-members C carefully cut and placed in between the stringers B hold the whole lot in shape. When cement has set hard, the framework should be sanded all over with very fine sandpaper and then covered. The writer used ordinary white tissue and outlined the shape and members with a black line, also cut from tissue. The effect of this is to give it an appearance of a framework complete with glass windows. The white tissue seems to be better for this than the more usual cellophane or celluloid used for windows in model aircraft, as it does not show up the inside woodwork, as the two latter. In conclusion may it be stated that this type of cabin top can be made to suit almost any model, and will in most cases improve the appearance without interfering with the performance. The top can be either held on to the fuselage with rubber bands or cemented on direct and made a fixture.

### STRENGTH IN MODEL BUILDING.—Concluded.

small wire clips are bound and glued to the main rails of the fuselage, this kind of fitting necessitating a fair amount of constructional work. In the example shown, appropriate lengths of aluminium tubing are glued into small plywood fillets suitably positioned on the fuselage, and the wire legs of the undercarriage may be quickly inserted for flight. This method has proved very trustworthy in practice, and results in a strong fitting which will stand any number of hard landings without damage.

As a matter of interest, the author has verified that when every one of the hints for extra strength mentioned herein are incorporated in one model of average size (a monoplane of 36 in. wing-span), the additional weight involved is the merest fraction in excess of half an ounce.

That this extra weight is more than compensated by the long life of the model, and ensures an immunity from repairs unknown to the flier of the ultra light-weight, the author can vouch, and this will, I think, be apparent to all practical model-builders on perusal of the illustrations.



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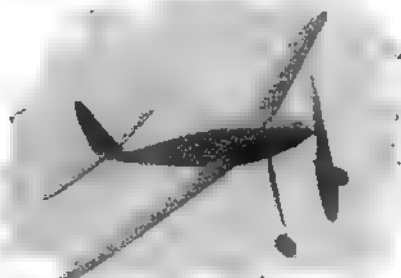
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## THE SOCIETY OF MODEL AERONAUTICAL ENGINEERS DINNER—To meet the winners of the King Peter Cup (of Yugoslavia) and the Competing Teams, and to bid farewell to the British Wakefield Team on the eve of their departure for the United States of America.

Lord Wakefield is in front of the page boy, and to the left of his Lordship is Lady Kingsley Wood, Sir Kingsley Wood, Mrs. M. Thurston (sister of Lady Kingsley Wood). Next to her is Mrs. S. S. Thurston (wife of Dr. A. P. Thurston, President of the Society); immediately to the rear of the placard "Danish Team," is Col. Fournier, and next to him is Miss Caroline Haslett. Immediately in front of the vase forming part of the background is Sir Lindsay Everard and Madame Mauboussin, then follows Monsieur Mauboussin, Lady Bruce-Gardner and Sir Charles Bruce-Gardner, then Sir Robert Goscer, Mrs. Lindley, Dr. M. F. Lindley, Mrs. Thompson, and Mr. E. J. Buckton. Reading to the right, Lord Sempill is standing between Lord Wakefield and Dr. Thurston, immediately to the rear of the placard "French Team" is Madame Soubbotitch and His Excellency Monsieur Soubbotitch. Immediately to the rear of the placard, "Belgian Team," is Lieut.-Col. Moore-Brabazon, and next to him is Frau Winninger, Miss Dunbar-Kilburne and Generalleutnant Winninger.



### VISCOUNT WAKEFIELD'S SPEECH:—

"YOUR EXCELLENCIES, MY LORDS, LADIES and GENTLEMEN,—Throughout the centuries the conquest of the air has been an ever-recurrent dream of mankind. From close observation of the flight of birds and study of the mechanics of their wing-structure, the great aim has been steadily pursued by successive generations of enquirers. At all vital stages, and particularly during the past twenty-five years, the model has been an essential means of experiment.

"I make this elementary point, because I wish to lay emphasis upon the fact that the movement which brings us together to-night is practical, serious, and of great potential value to the future of aviation. It comprises in its hundreds of local clubs up and down the land, and similar groups in almost every country in the world, thousands of enthusiasts.

"Some of our guests to-night are very young. Personally, I am glad of it; for, of our most famous

full-scale constructors, some in their own days of youth were doughty pioneers in model-making and flying. The youth of the movement is a sign of its strength and vitality. An examination of the journals and year-books of the movement will show them to be full of most learned articles and abstruse diagrams. The Society of Model Aeronautical Engineers is well named. In Dr. Thurston, its President for very many years, the Society has as its leader a man of high professional standing, from whose enthusiasm its members derive constant encouragement. I am quite satisfied that this international movement has a scientific basis.

"For many of us, it is of equal importance that the pursuit of model aviation is also a sport—a sport in which most of the civilised peoples of the world meet in friendly rivalry. And here I am sure that I speak for all my countrymen in offering a very cordial welcome to the teams from eight European countries who have been competing for the Cup so graciously offered for the first time in 1938 by His

Majesty King Peter of Yugoslavia. The British team were fortunate last year in becoming the first winners of the trophy, and so we have the honour of entertaining the visiting teams this year. Mindful of the wonderful hospitality we received in Yugoslavia, we have done our best to show our deep appreciation. I offer my warmest congratulations to the winning team upon their success, and also to all the teams upon their spirit of gallant sportmanship. We are very happy to think of many friendships, reaching across many frontiers, that have resulted from this meeting.

"This is no new feature of the movement. Over a long period of years another trophy has been the subject of keen and enthusiastic competition amongst teams from many nations. Our visitors from abroad will, I know, forgive me if I turn aside here, just for a moment, to express our good wishes to the members of the British Team which is leaving for America to make a bid for the Wakefield Trophy. Naturally, I hope for their success, but I am very

sure that, whatever the result, the contest will still further cement those long-standing international friendships to which I have already referred.

"The British model aviation movement is very proud this evening to welcome as its principal guest, Sir Kingsley Wood, His Majesty's Secretary of State for Air. His presence confers upon us the right, which we have always claimed, to regard our work as of national value; at least, I hope that is a justifiable interpretation. It certainly is a compliment which we most deeply appreciate.

"It is a great pleasure to me to couple with this toast the name of my old friend, Sir Kingsley Wood, His Majesty's Secretary of State for Air, to whose speech we shall listen with immense interest. We are delighted to acclaim one who has proved himself to be a great organiser of national endeavour, who has also the wider vision and the genius for friendship, which are the essentials of statesmanship.

"I now ask you to drink to the toast of 'The Science and Sport of Aeromodelling.'"

**"NATIONAL ROVER"** Span 43 in. Length 34 in. Designed by A. G. Bell, of N.H.M.F.C., is one of the outstanding models produced this year. While it is of straightforward construction, its design incorporates many outstanding features and has already received much admiration from modellers. The kit is supplied dry, and contains easy-to-follow plan and instructions, sharply-printed sheets, best quality strip balsa, bamboo, wire, ball-race, bush, tubing, tissue, special designed propeller blank, in fact everything (except liquids) to build this beautiful model.

PRICE Dry  
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Carriage 6d.

### "NATIONAL HUMDINGER"

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- Finished dummy engine
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- Ready-formed landing gear.
- Ample supply of fresh rubber.
- Easy-to-follow blue print.
- Best reported flight 2 min. 57 sec.

**KIT CONTAINS** easy-to-follow plan and instructions, ample supplies of balsa strip, four sharply printed sheets of selected balsa, finished propeller, dummy engine, nose plug, bamboo, celluloid, rubber, motor roar device, coloured tissues, celluloid wheels, ready-formed landing gear, and propeller shaft.



PRICE

**6/6** Dry

Superior Quality, Brown Fibre  
**CARRYING CASES**

Carriage 6d.

	Price.
37 in. x 7 in. x 7 in.	5/6
37 in. x 7 in. x 9 in.	6/6
40 in. x 7 in. x 9 in.	8/6
46 in. x 9 in. x 9 in.	10/6

Carriage and packing 1/6.

The "National Phantom" is undoubtedly the outstanding glider of the year; built to F.A.I. specifications, weight 13½ oz., span 72 in., elliptical wings and tail. While it is of advanced design, construction is such that it can easily be built by the average aero-modeller.



that it can easily be built.

### "NATIONAL PHANTOM"

Kit contains easy-to-follow plan and instructions, ready-made hollow

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Carriage 1/-

balsa wood, bamboo, covering materials, silk, loading weights, aluminium, sandpaper, plywood, ample supplies of dope, cement, high-gloss finish plastic wood, glue, paste, and cellulose lacquers.

**BEST REPORTED FLIGHT, 13 min. 27 sec.**

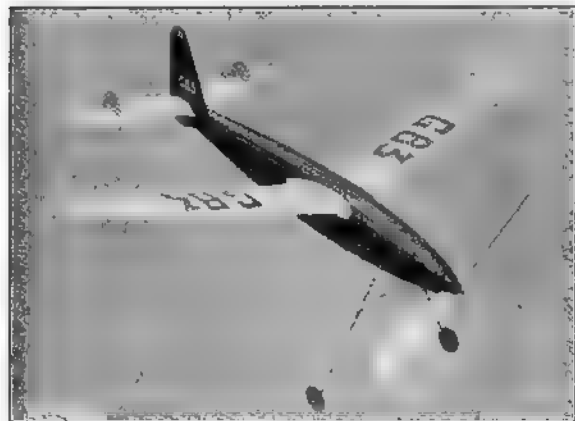
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# THE BRISTOL BLENHEIM 142M

A TWIN-ENGINE HIGH-SPEED BOMBER-FIGHTER

By J. A. BRAMAH



Photo, courtesy, Editor of "Flight."

**T**HE daily Press appears to delight in the dissemination of hair-raising reports of the strength and bombing potential of the German and Italian Air Forces, one writer even going so far as to allege that Hitler had told Mr. Chamberlain at Munich, last September, that unless the German demands on Czecho-Slovakia were accepted he would bomb London by hourly relays of fifty 'planes, and that such action could be maintained day and night for a considerable period. Whether this report is true in substance or not, it seems to completely discount the possibility of the large losses that would most certainly be inflicted on such raiders by the defending fighters of the Royal Air Force and by the anti-aircraft batteries that ring the Metropolis. Experience in the Spanish civil war has shown that modern anti-aircraft fire is far more efficient than that of the Great War, and quite an appreciable number of casualties were inflicted on both sides. Where no casualties occurred the barrages frequently caused the bombers to withdraw, or to fly so high that the accurate bombing of military objectives became completely impossible. The story about Hitler's alleged threat does, at least, serve to show how the bombing aeroplane has become an instrument for the furtherance of international political blackmail. It is very comforting then to know that in the Bristol "Blenheim," a high-speed, twin-engine, bomber-fighter, we have a weapon that would enable us to make an adequate reply to such an attack, and would, by the bombing of enemy's home bases, soon cause a reduction in the scale of such hostilities.

The Blenheim was one of the first monoplane types to be adopted for service in the Royal Air Force, and has been selected for large-scale production in the Government-

financed "shadow" factories. Though no definite figures may be given, it is safe to say that there are probably more Bristol Blenheims in service to-day than any other standard type of bomber anywhere in the world.

The Avro "Anson" was a modified version of the civil Avro 652, a small air liner designed to the order of Imperial Airways, and lately we have had the militarised edition of the Lockheed 14 designated, for R.A.F. purposes, the "Hudson." Although not a direct conversion of a civil type, the Blenheim was inspired by the remarkable performance of a small air liner built by the same concern. Round about 1934 the Bristol Aeroplane Co. Ltd., after experimenting with a system of all-metal aircraft construction, in which a stressed skin was used, produced a low-wing monoplane fighter, the Bristol 138, and also a big high-wing monoplane, the Bristol 180, which has since become familiar as the Bom-bay, a bomber transport that has been ordered in quantity for the R.A.F. and is being produced at the Belfast works of Short and Harland Ltd. The stressed-skin fuselage of a civil type, the Bristol 148, was exhibited at the Paris Aero Show in 1934, and Lord Rothermere, who was looking for a machine to prove that the British could build 'planes as fast as any in the world, was responsible for the conversion of this type into a smaller version fitted with two Mercury engines in place of the original Aquila sleeve-valve engines. This new machine, the Bristol 132, was christened "Britain First," and so impressed the experts at its Martlesham trials in 1935 that they asked Lord Rothermere for permission to conduct further tests. He immediately presented the machine to the nation. The military development, the Bristol 142M or "Blenheim," unlike "Britain First," was



a middle-wing, instead of a low-wing, monoplane, and more than maintained the performance of the first machine. For a long time all that the authorities would say was that it was the fastest machine of its class in regular service anywhere in the world, and it is only recently that figures have been released for publication which show this statement to be correct.

Since these figures, which are given later in the article, were released, a later and improved version, known as the "long-nosed" Blenheim, has been put into production and is probably now in service with the R.A.F. An even further improved model is to be produced for the use of the Royal Australian Air Force. The Blenheim will also be used by the Royal Canadian Air Force, and a small number of the original type, now known as the Mark 1, have already been supplied to Turkey, with whom Britain has recently concluded an alliance.

The primary use of the Blenheim is as a fast medium bomber, but it can, in fact, be adapted to many different uses, such as long-distance reconnaissance, fighting, and as a trainer for the new twin-engined fighters that everyone seems to be expecting. Its high speed, 279 m.p.h. at 15,000 ft., makes it a difficult machine for any fighter to tackle, and our last biplane fighters to go into service, the Gloster "Gladiators," are slower by about 24 m.p.h. The new monoplane "Hurricanes" and "Spitfires," however, have a good margin of speed in their favour, for their top speeds are 335 m.p.h. and 362 m.p.h. respectively.

This struggle for supremacy between the fighter and the bomber commenced during the Great War, and they have been passing and repassing each other ever since. The heavy bombers have always been comparatively slow, but have overcome this disadvantage, to a certain extent, by operating at night. It is in the day-bomber that the designer has concentrated on speed, and we can trace the development of this type right from the time of the Sopwith 1½ Strutter, the De Havilland 4's and 9's, which were single-engined types, and the twin-engined De Havilland 10's of the same period, through to the present-day Fairey "Battles" and Handley Page "Hampdens." What the bomber has lacked in speed, it has made up in defensive armament, and as time has gone on the "blind spots" have been steadily reduced, both in numbers and in size. The great pioneers of the fast twin-engined day-bomber were Boulton and Paul Ltd., who brought out a machine in this category towards the end of 1918. It was known as the "Bourges" and was powered by two A.B.C. radials, or, alternatively, by two Bentley rotaries, but it is doubtful whether it ever saw active service. This machine was the forerunner of the famous "Sidestrand," which had three gun positions—one in the nose, one on top of the fuselage behind the wings, and one under the fuselage which rendered unhealthy the attacking fighter's favourite "blind spot." A later model, the "Overstrand," mounted the first mechanically-operated gun turret to be used on a 'plane of the R.A.F. The Blenheim has a power-operated turret half-way along the top of the fuselage, but has no downward-firing gun under the tail.

Having considered the development of the fast medium bomber as used by the Royal Air Force, it is interesting to study the latest types of machines of this class which have made their appearance abroad. In order to fix definite limits to the size of the various machines in this category for the purposes of this article, only aircraft with a wing span of not less than 50 ft., and not more

than 60 ft. will be mentioned. It is natural that we should be primarily concerned with the aircraft of France, our friend and ally. Until recently her whole aircraft industry was in a sad state of chaos. This was due to its nationalisation under the direction of the Front Populaire, headed by M. Blum, and it is only lately that production has improved, and that new types have found their way into the French Air Force. Among these are the Potez 68, which does 285 m.p.h. and is designed for fighting, bombing and attack duties; the Breguet 690, which is primarily a bomber and has a top speed of 295 m.p.h.; and lastly, the Bloch 174, which is said to have a high speed of 310 m.p.h. These performances compare very favourably with the 295 m.p.h. of the "long-nosed" Blenheim, but all these machines have less than half its range.

Poland, with whom we have a mutual assistance pact, produces some very fine aircraft at her Government factory. Machines produced at this factory, the *Panstowe Zakłady Lotnicze*, bear the letters P.Z.L., and either a type number or a name. The P.Z.L. 87 or "Łos," is almost the same size as the Blenheim, but is not quite as fast, its top speed being given as 278 m.p.h. Its range in an overload condition is about 2,800 miles, which is very good indeed.

Italian twin-engined bombers have put up some fine performances, and hold many records for speeds with given loads, but the types which are in regular use with their Air Force, and which come within the limits of size which we have laid down, do not approach the Bristol Blenheim in any way.

In the Dornier Do. 17, Germany, the other Axis partner, has an aeroplane that has proved its worth under active service conditions. It is one of the standard bombers of the Luftwaffe, and has made its appearance, like our Armstrong Whitley, with several different engine installations. In its latest form, with Daimler Benz DB 600 engines of about 1,000 h.p., the Do. 17 has a top speed of 292 m.p.h. and a range of 1,490 miles; earlier versions were not so efficient.

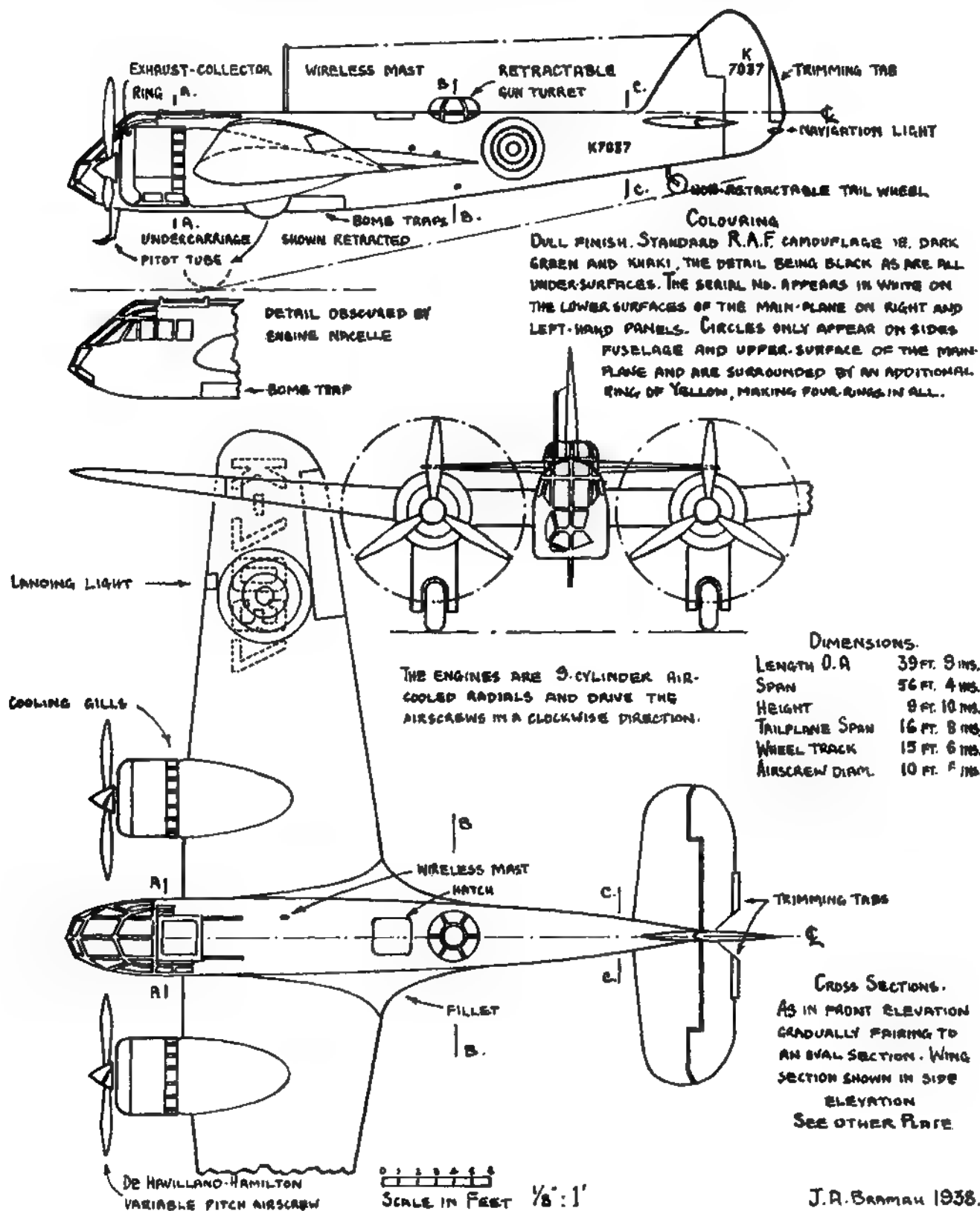
This brief review of foreign types will serve to show that the claims made for the Bristol Blenheim are justified by the available information on this subject, especially when it is remembered that any performance figures issued by the Air Ministry are, to say the least, conservative.

\* \* \*

Having discussed the "background," we can now consider the Blenheim itself. The Blenheim, as mentioned earlier in the article, first appeared in 1935, and was designed and built by the Bristol Aeroplane Co. Ltd., of Filton. This company is one of the oldest British aircraft constructors and was formed in 1910 by the late Sir George White, and was then called the British and Colonial Aeroplane Co. During the Great War the company produced several successful types, some of which were designed by the late Capt. Frank Barnwell, and it was this gentleman who was mainly responsible for the design of the Bristol 142M, or "Blenheim," as it is now known.

The Blenheim is a three-seater twin-engine cantilever mid-wing monoplane of typical modern stressed-skin metal construction. Close co-operation between the drawing office and the shops has resulted in a system of construction and assembly which has permitted of an output of machines almost large enough to earn the title of "mass-production." The fuselage is built in three

# THE BRISTOL 142M BLENHEIM (28/35) ENGINES-TWO 840HP. BRISTOL MERCURY VII's



J.A. BRAMAH 1938.

separate sections, and is a monocoque structure of light alloy plating riveted on a basic framework of formers and light stringers: no longerons are used and the metal "skin" takes a considerable proportion of the stresses to which the fuselage is normally subjected. The reason for the splitting of the fuselage into three sections is to enable the maximum number of men to work on it at any given time. The front fuselage portion is built on a jig, and as soon as it is finished it is removed to the erection line, where all the equipment and controls are installed, and when the front portion has moved right along the line it is almost complete and is ready to be bolted to the rear fuselage portion. The fuselage is completed by the addition of the tail unit, which is also built on a jig. The tail unit consists of the fin, tail-plane and the extreme end of the fuselage proper, and the whole unit is covered with a light alloy skin.

The wings, like the fuselage, are built in three portions—the centre section and two outer wing panels—the tips being detachable so repairs can easily be made in the event of them becoming damaged. The construction of the wings is all-metal, there being two spars, and the stressed-metal covering is flush-riveted. As in the construction of the fuselage, extensive use is made of jigs for the different portions of the wings. The centre section is assembled complete with the two engines, but without the undercarriage units. The rear portion of the fuselage is now attached to the centre section, and whilst the undercarriage and engine fairings are being attached the front portion of the fuselage is bolted in place. When the assembly of the Blenheim has reached this stage the tail unit is attached and all engine accessories are installed. The gun turret and its mechanism are also put in position and tested. The final stage consists of the mounting of the outer wing panels and the attachment of all control surfaces. All the controls are now connected up and a careful check-up is made before taking the completed machine out for flight trials.

The engines used on the Blenheim are 9-cylinder air-cooled supercharged radials, with an individual output at 14,000 ft. of 840 h.p. They are produced by the engine division of the same company, and are known as Bristol Mercury VIII's. The airscrews are De Havilland-Hamilton metal three-blade two-position hydraulically operated.

Hydraulically-operated jacks are used for the retraction of the two halves of the undercarriage, and for the flaps which are fitted to the centre section of the wing and on the inboard portions of the wings. Visual, audible and mechanical indicators are installed by the side of the pilot, and warn him about the position of the undercarriage.

The other two members of the Blenheim's crew are a bomb-aimer-navigator, who sits by the pilot in the front portion of the fuselage, and a wireless-operator-gunner, who is in the rear portion of the machine.

The armament consists of a machine gun mounted in the wing, for the use of the pilot, and of another machine gun installed in a power-driven semi-retractable turret on top of the fuselage. A considerable bomb load is carried internally in the lower portion of the fuselage, the bombs being fused and released by electrically-operated gear.

Extensive equipment is carried, and includes night-flying gear and formation-keeping lights, oxygen, two-way wireless and, if necessary, an automatic pilot. Other optional equipment consists of a camera for reconnaissance work, and a collapsible dinghy when the machine has

over-water flying to do. The wireless installation is particularly comprehensive, full transmission and reception being provided, and full inter-communication between the different members of the crew is made possible by the provision of telephone and microphone points. Either fixed or trailing aërials may be used.

Bombing operations necessitate very careful navigation if they are to be successful, and so it is not surprising to find that the Blenheim is well equipped with navigation aids. These include a compass, tail drift sight, chart board, an Aldis signalling lamp, and a Very signal pistol which fires down a tube through the floor.

The main dimensions of the "Blenheim" are given herewith:

	ft.	in.
Span ... ..	56	4
Length ... ..	89	9
Height ... ..	9	10
Airscrew (diameter) ... ..	10	6
Engine—centres ... ..	15	6
Chord (root) ... ..	11	6
" (tip) ... ..	6	0
Tail-plane (span) ... ..	16	8
" (chord, root) ... ..	8	5
Wheel track ... ..	15	6

Performance figures for the standard, or Mark I, Blenheim are given below. Apart from the top speed of 295 m.p.h., no figures have been released for the "long-nosed" Blenheim at the time of writing.

Climb to 5,000 ft. ... ..	2.8 min.
Climb to 10,000 ft. ... ..	5.5 "
Climb to 15,000 ft. ... ..	8.8 "
Climb to 20,000 ft. ... ..	13.0 "
Service ceiling ... ..	30,000 ft.

Speeds (with full military load).

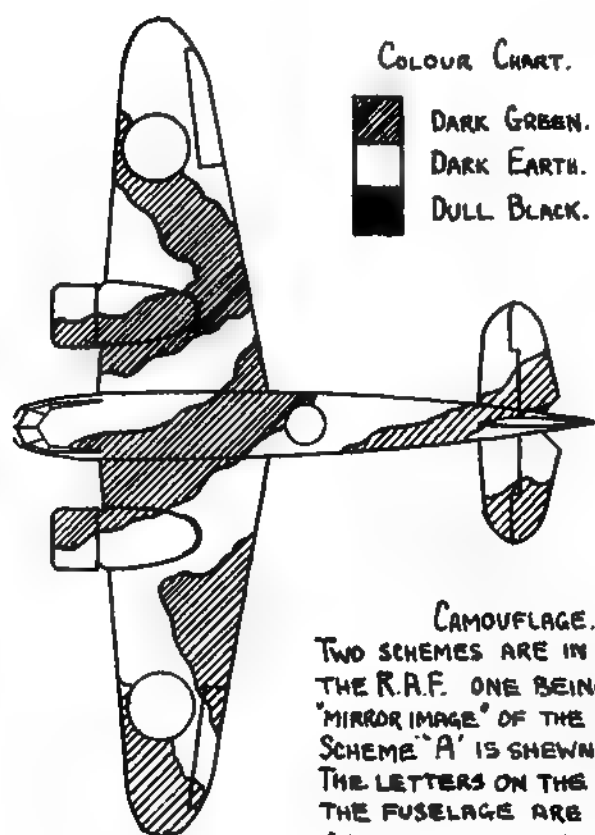
Maximum at sea level ... ..	220 m.p.h.
Maximum at 5,000 ft. ... ..	247 "
Maximum at 10,000 ft. ... ..	265 "
Maximum at 15,000 ft. ... ..	279 "
Maximum at 20,000 ft. ... ..	275 "
Duration ... ..	5 hours
Range ... ..	1,000 miles

A French publication, *Revue de l'Armée de l'Air*, credits the "short-nosed" version of the Blenheim with a top speed of 285 m.p.h. and the "long-nosed" version with a top speed of 295 m.p.h. and a range of 1,865 miles.

The Blenheim is said to be a pleasant machine to fly and is well-liked by the pilots of the R.A.F. In the air the pilot's compartment is pleasantly warm on a cold day, but rather hot in summer. Noise from the engines is not as great as would be imagined. The field of vision for both the pilot and the navigator is quite exceptional, but is impeded at the side by the large engine nacelles. This lack of vision in a sideways direction makes line abreast formations impossible. The acceleration when the machine is taking off is very impressive indeed, and has to be experienced before it is fully appreciated. The high rate of climb gives the impression of being in a lift, but in spite of the very high performance of the Blenheim it is very responsive to the controls.

The manoeuvrability of the Blenheim makes it very suitable for fighting duties, and it is used for this class of work by No. 601 Squadron of the Auxiliary Air Force. Other squadrons that use the Blenheim are Nos. 80, 44, 62, 90 and 110. This is obviously a far from complete

# FURTHER DETAILS OF THE BRISTOL BLenheim.



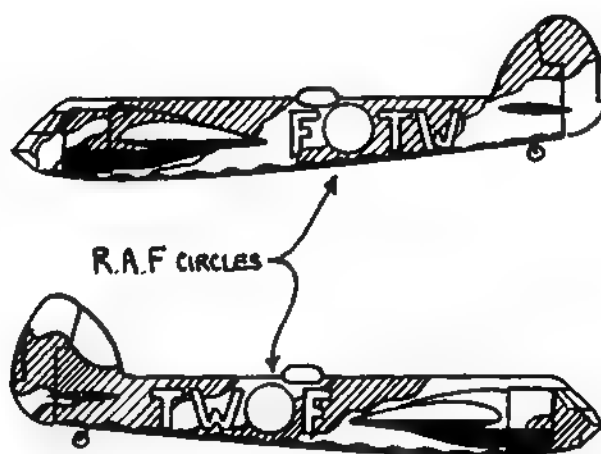
## COLOUR CHART.



DARK GREEN.

DARK EARTH.

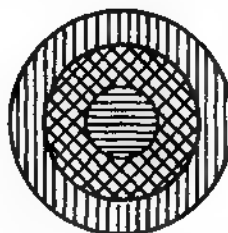
DULL BLACK.



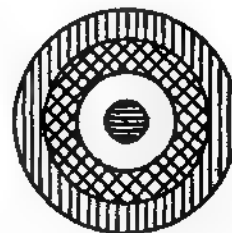
R.A.F. CIRCLES

## CAMOUFLAGE.

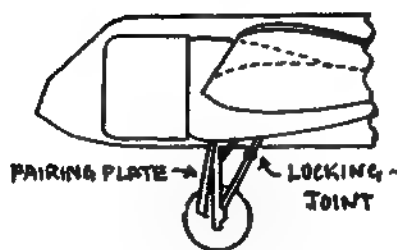
TWO SCHEMES ARE IN USE BY THE R.A.F. ONE BEING THE 'MIRROR IMAGE' OF THE OTHER. SCHEME 'A' IS SHOWN HERE. THE LETTERS ON THE SIDES OF THE FUSELAGE ARE IN WHITE AND DENOTE THE SQUADRON TO WHICH THE MACHINE BELONGS.



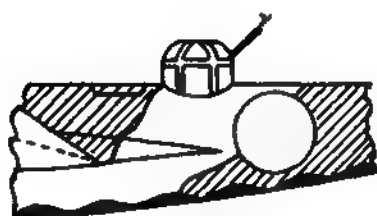
I



II



(a).



(b).

## I & II

THE NATIONAL MARKINGS SHOWN ARE BOTH IN USE, I BEING THE LATER OF THE TWO TO BE ADOPTED. IT WILL BE NOTICED THAT THE WHITE IS MISSING.

(a).

THIS VIEW SHOWS THE UNDERCARRIAGE UNIT IN THE "DOWN" POSITION. THE STRUTS AND PAIRING-PLATE ARE PAINTED BLACK.

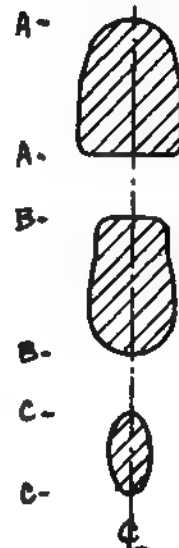
(b).

IN PLATE I THE TURRET IS SHOWN IN THE RETRACTED POSITION, BUT IS HERE SHOWN "AT THE READY".

## CROSS SECTIONS OF THE WING.

THESE MAY BE OBTAINED FROM THE 3-VIEW DRAWING.

## FUSELAGE CROSS SECTIONS TO SCALE.



TWO DRAWINGS ABOVE ARE TO SCALE

J. A. BRAMAH. 1939.



list of the squadrons that do use the Blenheim, but recent Air Ministry regulations have forbidden the issue of such information.

The standard camouflage painting is used on all Bristol Blenheims in service with the Royal Air Force, and consists of irregular patches of dark green and dark earth on all upper surfaces and on the fuselage. The lower surfaces of the wings are finished a dull black, as is the bottom of the fuselage. The line between the black paint and the green and brown on the fuselage is wavy, but is straight on the wings. The R.A.F. circles appear on the sides of the fuselage and on the upper surfaces of the main plane, but not underneath the wing. These circles are now surrounded with an additional ring of

yellow to make them more easy to distinguish against their dark background. The identification numbers are painted on the sides of the fuselage, near the tail, in black, and on the lower surface of the wing in white. The numbers read from the wing-tip towards the fuselage, and are on both the left- and right-wing panels. The exhaust-collector rings round the front of each engine are grey, and all details are painted black.

Sufficient information is contained in this article to enable a satisfactory model to be made of the Blenheim, but it is always advisable to consult as many photographs as possible before embarking on construction. If possible it is better to study an actual machine, but of course we cannot all do that.

## DETAILED RESULTS OF THE KING PETER CUP COMPETITION

### FRANCE.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. Louis Vanboin ...	1,262.5	6,441.6
2. Andre Vanboin ...	1,897.5	2,108.0
3. — Bougueret ...	2,992.5	1,921.5
4. Ernest Chardard ...	1,482.5	1,665.8
5. Andre Vanboin ...	1,218.0	1,801.05
6. Raymond Chardard ...	577.0	2,415.6
Total ...	8,980.0	16,848.05

### GREAT BRITAIN.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. A. Cox (Northern Heights)	2,577.5	18,084.5
2. H. Hill (Lancashire) ...	725.0	1,564.65
3. A. A. Weston (P.M.A.L.)	576.25	1,872.5
4. H. N. Simmons (Blackheath)	688.0	1,006.5
5. N. G. Olliver (Unattached)	407.5	1,000.0
6. A. C. Minion (Hayes) ...	495.0	896.7
Total ...	5,469.25	18,924.85

### GERMANY.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. Gustav Samann ...	2,780.0	8,019.5
2. Baptist Bauer ...	2,207.0	2,818.2
3. Heinz Emmerich ...	1,561.0	2,415.6
4. Walter Menge ...	1,430.0	2,814.95
5. Rudolf Mock ...	1,226.25	1,761.875
6. Rudolf Mock ...	1,495.0	992.775
Total ...	10,649.25	18,822.40

### YUGOSLAVIA.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. N. Herencic ...	1,959.0	4,026.0
2. V. Pracek ...	995.0	4,575.0
3. M. Majnaric ...	1,287.5	8,271.12
4. G. Cencic ...	795.0	1,912.85
5. E. Velinkonja ...	922.5	1,235.25
6. V. Seredinski ...	1,050.0	988.62
Total ...	6,959.0	16,008.34

### HOLLAND.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. B. Van Daalen ...	1,108.5	2,214.8
2. G. J. Sakkers ...	1,270.0	1,692.75
3. G. G. de Groot ...	1,475.0	1,409.1
4. P. J. Najus ...	1,008.5	1,862.025
5. L. Visser ...	915.0	1,711.05
6. P. J. Napjus ...	990.0	1,808.45
Total ...	6,762.0	10,197.675

### SWITZERLAND.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. Ruthen Buheler ...	2,040.0	8,018.5
2. — Rothenbuhler ...	1,115.0	2,415.6
3. S. Keller ...	612.0	2,287.5
4. A. Degon ...	691.0	1,107.15
5. S. Keller ...	525.5	1,066.825
6. W. Kugler ...	851.0	580.925
Total ...	5,861.5	10,466.5

### BELGIUM.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. — Petitjean ...	1,180.0	1,107.15
2. — Nuyens ...	575.0	1,418.25
3. — Nycur ...	740.0	549.0
Total ...	2,445.0	8,074.40

### DENMARK.

	BEST DURATION	BEST DISTANCE
	POINTS.	POINTS.
1. H. Jensen ...	1,274.0	1,811.7
2. T. Vissen ...	1,455.0	754.875
Total ...	2,729.0	2,566.575

A free subscription to THE AERO-MODELLER for the next year was presented to each member of the above teams.

# CAN YOU TAKE A PHOTOGRAPH LIKE THIS?

It was taken by Capt. J. R. Blunt, and won First Prize in our 1937 competition for photographs of models in flight.

THIS COMPETITION IS OPEN  
TO ALL READERS, AND  
THERE IS NO ENTRY FEE

## EIGHTEEN CASH PRIZES TO BE WON—

SIX FIRSTS OF £1  
SIX SECONDS OF 10/-  
SIX THIRDS OF 5/-

All prize winners who are members of the N.G.A., and who have N.G.A. transfers showing on the models in their winning photographs, will have their prize money increased by 50%



### JUDGES :

R. YORK ESQ.

J. R. BLUNT ESQ.

EDITOR, The Aero-Modeller

**CLASS 1. Semi-Scale Flying Models**

**CLASS 3. Duration Type Flying Models**

**CLASS 5. Flying Scale Models**

**CLASS 2. Petrol Planes**

**CLASS 4. Gliders**

**CLASS 6. Solid Scale Models**

### COMPETITION RULES

- Entrants' photographs may be taken by any person, other than a professional photographer.
- All photographs submitted must be of entrants' own models.
- No photographs can be returned to entrants.
- Any number of photographs may be submitted, but each must have entrant's name and address typed, or written in ink, on the back.
- All entrants submit photographs on the understanding that, in the event of their winning a prize, the copyright in the prizewinning photographs becomes vested in the proprietors of THE AERO-MODELLER, on payment of the prize money.
- All entries must be accompanied by the entry form, duly completed by the entrant, which will be provided in the October issue of THE AERO-MODELLER (published on or about September 20th, 1939), and must be accompanied by the photographic competition coupons printed on page 491 of the July issue; on page 546 of this issue; and to be published in the September and October issues.
- All entries must be sent to Allen House, Newark Street, Leicester, to arrive not later than first post on September 30th, 1939, and full results will be printed in the November issue, to be published on or about October 20th.
- Entries for this competition will be accepted only on the understanding that the decision of the judges is accepted on all matters as final and legally binding.
- Entry Forms which have not been properly completed, and/or entries which do not comply with all the rules of this competition, and/or which arrive after first post on September 30th, will be disqualified.
- Photographs may be of models in flight, posed as in flight in the case of solid models only; or stationary. Quality of workmanship in models photographed will be of secondary importance, as the main object of this competition will be to obtain realistic photographs. Entrants should, therefore, pay particular attention to the background in the composition of their photographs.

# THE DEVON AND EXETER MODEL



Organised by Mr. E. G. Wheatcroft,  
secretary of the Devon and Exeter  
M.A.C.

AT

**HALDON AERODROME**

**Near EXETER**

**on 23rd JULY, 1939**

*Some of the petrol 'planes in the  
Enclosure.*

**A**S appears to be the usual cry this year at rallies, the weather in the morning was bad, and throughout the day competitors were battling with a wind which was blowing towards the hangars.

Flying commenced at 12 noon, when the Popular Duration (nominated time) was proceeded with. This event brought some fine flying, as the time, 46 seconds, was not announced until just before the contest. The result was a win by Mr. E. G. Davis, of the Devon and Exeter Club, with 48 seconds; second, P. Langford, of Plymouth and District, 50 seconds. Really good judgment on the part of the competitors, especially as the wind was blowing across the aerodrome at about 25 m.p.h. At least two machines were last seen flying towards the coast some four miles away. (Anyone finding, please advise the Editor of this journal).

The gliding contest was an overwhelming victory for members of the Bournemouth Club, and though there is a great difference in first and second results, this was due to the slope of the aerodrome, timekeepers being unable to follow the flights after about half-mile.

A very short interval was taken for lunch, and immediately after the principal event of the day, the inter-club contest for the "O'Donnell" Cup, took place.

Here was seen some of the best flying of the day. J. Repik, of Torquay (2), recorded 89 sec. O.O.S., and Miss E. Burt, for the Bournemouth team, put up the fine time of 82.4 sec. O.O.S. Well done, Miss Burt.

Nearly all flights over 40 seconds were blown well away from the starting point, most machines landing on the golf links near by, or in a quarry some three-quarters of a mile away.

During this competition the weather cleared, but the wind increased in velocity. Thermals were few, and the machines seemed to rely upon their motors and climb, after which they were swept along at a great speed out of sight.

It was decided to leave the petrol reliability competition until last, hoping that the wind would drop.

Several hundred people turned up in the afternoon, and, until threatened that modellers had refused to continue unless they kept behind the barrier, hindered the flying, and damaged one or two machines. During the

flying of petrol machines they were well marshalled by the voice from the control, and thereafter very few spectators wandered about.

The spot landing for petrol machines brought some excellent flying, but here again models were attaining such heights that most of the machines had to be chased a considerable distance to be recovered. At times spectators thought it was "good-bye," but the machines turned up again after a short interval. Two "crack-ups" were recorded.

The endurance contest brought out the best of most clubs, but here again the wind hurled several machines to destruction. T. Church, of the Devon and Exeter M.A.C., put up the best performance, with an average of 57 sec.

It was late when the Petrol Reliability Competition took place, and the standard of flying was extremely high. Had the wind been blowing from the south, records would probably have been broken. Records *were* broken, but only at the control, where Mr. E. G. Wheatcroft, assisted by Mr. Chas. Aggett, Torquay Sec., and Mr. Kay, of Torquay, did very fine work.

The Devon and Exeter M.A.C. won three events, Plymouth and District M.A.C. two, and Bournemouth one.

On the whole, the Devon Rally was an absolute success, thanks to the very hard work of the organiser.



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# AEROPLANE RALLY

## RESULTS AND TIMES

### INTER-CLUB CONTEST FOR "O'DONNELL" CUP.

1st, The Devon and Exeter Model Aero Club, with 287.7 points. Represented by: D. L. Toseland, E. G. Davis, T. Church, and D. M. Peters.

2nd, Bournemouth Model Aircraft Society, with 184.8 points. Team: Miss E. Burt, D. Frampton, W. J. Forster, and J. Leadbetter.

3rd, Torquay and District 2nd team, with 164 points. Team: R. Perrett, J. Repik, G. Pearce, and F. A. French.

4th, Plymouth and District, 1st Team, 184.6 points.

5th, Torquay and District, 1st Team, 116.8 points.

6th, Plymouth and District, 2nd Team, 98.6 points.

Best individual flight, J. Repik, 89 sec.

### POPULAR DURATION (NEAREST 46 SECONDS).

1st, E. G. Davis, The Devon and Exeter Model Aero Club, 48 sec.

2nd, P. Langford, Plymouth and District, 50 sec.

3rd, E. J. Taylor, Torquay and District, 86.2 sec.

### ENDURANCE CONTEST (RUBBER).

1st, T. Church, The Devon and Exeter Model Aero Club. Average 8 flights, 57 sec.

2nd, E. J. Taylor, Torquay and District. Average 8 flights, 46.2 sec.

3rd, F. W. Crute, Torquay and District. Average 8 flights, 48.8 sec.

### GLIDER CONTEST.

(Owing to time and weather conditions one flight only was made).

1st, W. J. Forster, Bournemouth, 112 sec. O.O.S.

2nd, — Rickard, Bournemouth, 86 sec. O.O.S.

3rd, J. Leadbetter, Bournemouth, 26 sec.

### SPOT-LANDING FOR PETROL 'PLANES.

1st, J. Trend, Plymouth and District.

2nd, J. E. Pitt, Bournemouth.

### PETROL RELIABILITY CONTEST.

1st, J. Trend, Plymouth and District.

2nd, J. E. Pitt, Bournemouth.

## LUTON MODEL AIRCRAFT SUPPLIES

### Build a Pusher, Low Wing Monoplane

#### The "BECCO" Pusher

39 in. wing span, twin rudders. Kit complete, 10/- post free. M.W.B. 100. Super Wakefield plane. Winner of many contests. Average duration, 2½ min. Best official time, 12 min. 1 sec. R.O.G.

M.W.B. 101. Similar to above. Streamlined. These kits include set of wing ribs and H.W.B. propeller. Post free 16/6.

**BECCO SAILPLANE.** Wing span, 6 ft. Conforms to F.A.I. Rules. Hillside and towline launching. Super streamlined kit, 17/6 post free.

Send to—

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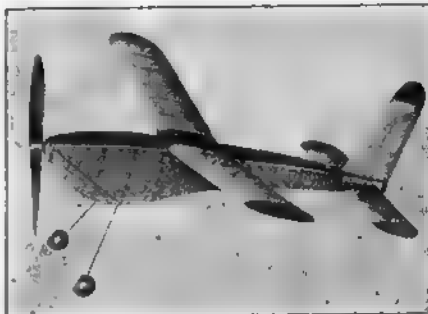
## "NIPPY"

WING-SPAN  
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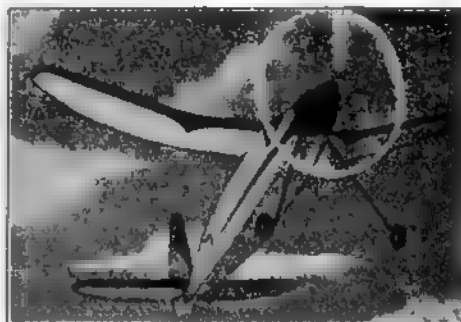
LENGTH  
24 in.

Average duration  
80-120 seconds

Finished propeller, free-wheeling shaft, balloon wheels, rib outlines clearly printed on M.A.T.A. balsa, balsa strip, wire, tissue, brass bush, cement, dope, tissue-paste, semi-finished nose block, FULL-SIZE PLAN instruction sheet, aluminium tube, washers, and eight strips of rubber.

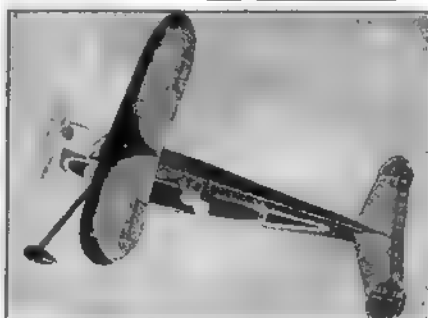


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KORDA'S  
WORLD  
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HOLDER**

54 minutes in the air. 43 in. wing span. Simple to build 6/6 post free.



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RUBBER-  
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3d.	4d.	5d.	7d.	9d.	11d.	1/2	15	18	2/8

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# LETTERS TO THE EDITOR —

DEAR SIR,

The King Peter Cup Contest over, and the Wakefield team off to America, there remains one thing for me to do, and in your columns seems the best place to do it, and that is to thank all who helped so magnificently to manage the almost impossible.

First, at the Wakefield Trials: The key men here were undoubtedly the enclosure stewards. At times their keenness to push forward their particular competitors led to some confusion, but they did a grand job, as also did the timekeepers. So, too, did the volunteers who chased miles over the surrounding country—thanks a lot to you all.

An especial appreciation is due to the King Peter Cup helpers, both at the trials and at the competition proper.

To the Cranwell boys under W.O. Gutteridge and Flt./Sgt. Crittal, who on both days, the contest proper and trials, undertook distance measurement, and did it well; the unseen but necessary chasers and markers for range-finders; Corporal Mills and his counterpart and their teams; to the timekeepers under Mr. D. A. Gordon; to the Halton boys, led by Mr. Adams; the volunteers with cars and those who loaned binoculars; for recording efficiently and neatly carried out, by Mr. C. H. Orchard; to Dick Turpin's Kitchen for the use of their 'phone, not forgetting the Air Force boys who sat the two days through at that 'phone; and last, but not least, to the Hayes Working Party, under Mr. Wheatley, who finally cleaned the drome of litter; to those, too, who helped and I have left out; on behalf of the Society I extend our sincere thanks to you all.

Sincerely,

J. C. SMITH,

*Hon. Competition Secretary, S.M.A.E.*

August 1st, 1939.

Tawhana Street, Te Kuiti,  
New Zealand,  
July 2nd, 1939.

DEAR SIR,

I am prompted to let you know how much we appreciate your publication. I can truly say that there is not another to beat it—not one to my knowledge, at any rate, including those from America. Since the incorporation of the *Model Aeroplane Constructor*, the contents have improved to a large extent, and you are now publishing just the type of articles that are of most use. Personally, though, more hints and notes on Wakefields and sailplanes would be very acceptable. However, you cannot please everyone all the time.

Now, in closing, I would like to know if you know of anyone in an English club who would like to correspond with the chaps in this part of the world. I can guarantee that any letters received will be answered to the best of our ability. Although we are so far away we are still keen on the best of hobbies, even if we are novices as compared with Mr. Bullock, Bob Copland and company. If you would pass my address on to someone I should be very grateful.

Thanking you for your forbearance in reading this, and wishing you every success in the future.

Yours sincerely,

N. B. RUNDLE.

DEAR SIR,

Model building has to-day practically come to a standstill. A few years back the model builder was a sort of pioneer. He tried out ideas of his own; ideas that had not been thought of before. Sometimes they worked, more often they did not, but each time they did, the science of aerodynamics took another step forward.

At that time durations were poor, and the advent of balsa was hailed joyfully by every modeller as a means of getting higher flying time. Streamlining came into fashion, elliptical wings and stabilisers were evolved, and some genius invented the one-bladed prop. All this was progress, and now we have obtained the perfect duration model, which in itself has not helped aviation one iota. The sky over every flying field is full of the darn things, all floating round like a lot of bits of wayward thistle-down, and scaring the birds out of their natural element.

Once in a while a brave spirit comes forward with a machine of radical design, braving the jeers of his mentally stagnant confederates. But these experimenters are far too few. Naturally enough, for no man likes to be laughed at.

There are still a lot of things aviation needs. New ideas for flaps to reduce landing speeds. 'Planes with shorter take-offs. Vertical flight and descent, and a host of other things. Surely the model airplane hobby is for the furtherance of full-size aviation, and not just a form of innocent amusement for children?

At present there are far too many duration competitions, and not nearly enough useful ones. Apparently public opinion dislikes anything, shall we say, out of the ordinary. This fact is proved by the failure of the flying-boat contests, which, owing to the ingenuity required, have about three entrants. One mentions flying boats to the average modeller, and a sort of glaze comes over his eyes, and his is obviously thinking, "Crazy, I guess."

Now, why can't we have at least four competitions a year, for ideas that could be considered as useful to the aviation industry? Also, and this is most important, there should be really decent prizes. Nothing will annoy a man more than to get about five bob first prize for a model that has cost him fifteen to make, and that has taken up three or four weeks of his spare time.

Yours, etc.,

A. W. KEMSLEY.

c/o Standard Bank, Box 16,  
Steytlerville, Cape Province,  
July 11th, 1939.

DEAR SIR,

With the Harrow boys so hard against you and yours ("Clubman"), I have been tempted to add my little weight to prevent your being "encircled." This letter has long been in my mind, but I have always been delayed by the feeling that you have little enough time to spend perusing congratulatory letters, and you realise I am sure how little time we modellers get for writing!

Starting with my own predicament, I am 120 miles by S.A. road from the nearest club, and the two occasions on which I have journeyed down to participate in competitions have been both of no avail, as the events were postponed in each case. My only touch with the game is through correspondence with a generous friend who is



"Gosh! Bet there'll be something in  
"The Aero-Modeller" about this!"

at the top of the tree in our "game," and, of course, from books. Frank Zaic's year book I have found a storehouse of information, but for keeping in touch with the model world it's your old AERO-MODELLER which does the trick. I may say that I am a regular subscriber to *Model Airplane News*, and I have learnt a lot from it. There have been excellent plans and articles of practical interest on design and trimming of models, but it costs double THE AERO-MODELLER, and I am afraid my model sympathies are more attuned to the British line of thought as put forward in your paper, viz., streamline Wakefield! à la Bullock, Chas. Copland and Co.

After some considerable thought I feel that your paper is beyond criticism except in one respect, and that is detailed and illustrated instruction on the trimming and flying of models. This is more apparent to me than to members of clubs who have only to look about them to see how it is done. I realise your difficulty in trying to cater for every modeller, from beginners to experts, but I feel that no modeller will become an expert until he can diagnose and correct all antics which his plane resorts to. I may be anticipating things in the above paragraph, as Howard Boys series on design of simple duration models, and the *excellent* series of theory by Van Hattum lead up to a series of articles on practical flying—when it comes, don't stint detail!

Poor Clubman! He is welcome to his task! I wasn't particularly struck with his "Sid Walker" skit, but I must say that when reading the notes I watch out for the humorous digs which he has now and again. The system of whittling down the club reports in their present form is definitely better reading than the earlier method of giving reports. Keep smiling, Clubman, I am on your side, the whole club:—

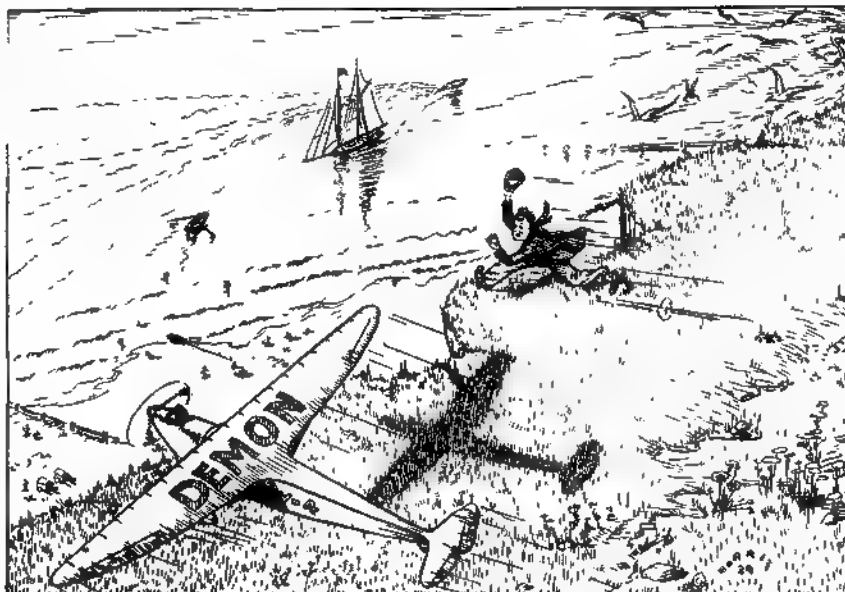
100% { President: L. B. Krummeck.  
Treasurer: L. B. Krummeck.  
Secretary: L. B. Krummeck.  
Captain: L. B. Krummeck.  
Record holder: L. B. Krummeck.  
Member: L. B. Krummeck.

And then there is "Freddie." Pay him double, but keep him going!

And lastly the plans! I feel you deserve special congrats. on the excellence of your latest plans. My own interest is in building my own designs, but THE AERO-MODELLER plans are carefully stored for the day when I decide to change my tactics.

The best of luck to you and your staff, and if you can just keep THE AERO-MODELLER where it is you can't do better. Never mind what the "old-school-tie" lads say, your publication is the sole line of communication with we poor lone hands, and we appreciate your efforts.

Yours aeronautically,  
L. B. KRUMMECK.



DEAR SIR,

Being painfully aware that the human species (aero-modelling sub-section *certainly* included) is far handier at doling out brickbats than bouquets, thought would send a line of appreciation *re* Mr. D. R. H. Gardner's "Short Story" in the current issue of THE AERO-MODELLER.

I like the style tremendously, and the final paragraph is a masterpiece!

Yours sincerely,  
M. R. KNIGHT.

DEAR SIR,

May I, through the medium of your columns, once again thank the many enthusiasts who turned up at the recent Northern Rally, in particular those who so wholeheartedly "mucked in" and helped in various ways with timekeeping, etc.

Many things went against the normal running of this event, in particular the weather, but from an organisation point of view, the breakdown of the public address system was our greatest handicap, prevented the efficient running of the events, and precluded the various acknowledgments we wished to make during the course of the day.

All things considered, I suppose we must count ourselves lucky in being able to get through the programme as we did, but we realise that, without the help of our many friends, both competitors and others, it would have been an impossibility. The way they all stuck it out in the face of adverse conditions and handicaps was very gratifying to ourselves as the organisers, and gives us the necessary encouragement to go ahead with arrangements for future, and we hope, better Northern Rallies.

Our friends of the Press, trade, and among the steadily increasing horde of aero-modellists, are too numerous to thank individually, and we must, therefore, ask them to accept this letter as our sincere appreciation of your support. Those who have attended in previous years know what we can do given the usual amount of luck, and to those whose first taste of a Northern Rally this was—come again next year, when we hope to be able to present you with an event more in keeping with our usual standards.

Yours faithfully,  
C. S. RUSHBROOKE.

# BUS DRIVERS' MODEL AIRPLANE CLUB

ON alternative day and night shifts, broad-shouldered Mr. D. Valleley drives a 'bus for the Manchester Corporation Transport Department. But when he returns to his trim little cottage at Crossacres, Wythenshawe, he sees too many lads hanging about the street corners with nothing to do—ripe for temptation.

So, realising what little scope this new working-class garden city of Manchester as yet offers to young people, he is tackling the problem in his own way. He has formed a working-class model flying club, the Wythenshawe and District Model Aero Club.

Every week earnest conclaves go on in Mr. and Mrs. Valleley's front parlour, headquarters and workshop of the new club. Model Puss Moths are brought out, latest machines studied, plans of campaign drawn up.

Enthusiasts aged from 10 to 40 have hurried to join the club, paying 2d. weekly if they are still at school, 3d. if at work. They learn by their mistakes, for they have no expert to teach them.

Mr. Valleley's ambition is to bring model aeroplane making and flying within the reach of working-class youth. Three of his young members deliver newspapers at 5.30 a.m. every morning before their daily work, so that they can buy materials for their hobby.

Mr. Valleley helps by buying stocks of materials and selling them to members at cost price, saving them 8d. fares to town. He has also given a free library of model aircraft magazines and books.

Where to fly the machine is one of the big problems of the members. Whenever they choose a suitable field the Corporating Housing Department digs it up for the foundations of a new housing scheme. Sunday evenings are when the club displays its full aeronautical strength to the admiring people of Wythenshawe, and some graceful machines are flown then.

Flushed with their first successes, members are now hoping that some kind fairy in authority will let them use a corner of Ringway Airport for their models of the real machines which land there.

Mr. Valleley hopes that a corps of instructors will be formed out of the enthusiasts he has gathered round him. Formation of a Ladies' Section and introduction of the hobby to Wythenshawe Schools, are other ambitions in mind.

What first made him an enthusiast? "An old copy of THE AERO-MODELLER, which I found on a market stall in Manchester," he told an "AERO-MODELLER" reporter.

## THE "WREN"

THIS model was designed to give consistent results. It is very stable and robust, and can be tackled with assurance by the beginner. It will easily average 85—120 seconds, and the best flight to date is 8 min. 22.3 seconds ought of sight.

*Note.*—The drawing is to a scale  $\frac{1}{2}$  of full size, except the wing and tail and ribs, which are full size.

### The Fuselage.

Place a sheet of greaseproof paper over full-size plan. Pin two longerons into position and cement cross pieces in position. Now lay another sheet of greaseproof paper over side already built, and make another side. Paper prevents sides sticking together. When dry, place two finished sides upright on plan, and cement other cross pieces in position. Fill nose in with sheet balsa, cement tube for rudder fixing to stern post. Sheet for  $\frac{1}{2}$  in. dowel rod is next cemented securely in position. Two 20 gauge tubes are next tied and cemented to corresponding cross members. A scrap piece of balsa is cemented at back to hold tail skid. Front of fuselage is further strengthened with a former 1 mm. ply.

### Wing.

This may be made in one piece or two separate pieces, cementing at first ribs. Dihedral and sweepback is steamed into spars.

Cut out necessary ribs and assemble in the usual way. Last rib in each wing must be made slightly smaller to account for tip. Centre of wing is filled in with  $\frac{1}{2}$  in. sheet balsa to strengthen it where it is held on to the fuselage by elastic bands. Dihedral 2 inches at each tip.

### Tailplane.

Make 4 ribs "X." tapering other ribs correspondingly. Finish to plan. Space between centre ribs is for rudder. Do not cover here.

### Rudder.

Make to plan. It will be noted that rudder tapers from  $\frac{1}{2}$  in. at bottom to  $\frac{1}{8}$  in. at top. Slots in  $\frac{1}{2}$  in. sheet at bottom are arranged to clear tail-plane spars. Lines "Y" and "Z" are wire hooks made for holding rudder to fuselage with elastic bands.

### Covering.

Cover all parts with light-weight jap tissue (colours to suit personal taste). When dry spray lightly with water to tighten, dope, and any decorations such as scallops in black may be doped on.

### Undercarriage.

Legs are of  $\frac{1}{8}$  in. by  $\frac{1}{8}$  in. bamboo, tapered to  $\frac{1}{2}$  in. by  $\frac{1}{8}$  in. 20 gauge piano wire is tied and cemented as shown. Wheels are  $1\frac{1}{2}$  in. diameter streamlined celluloid type. Track, 5 in.

### Nose Plug.

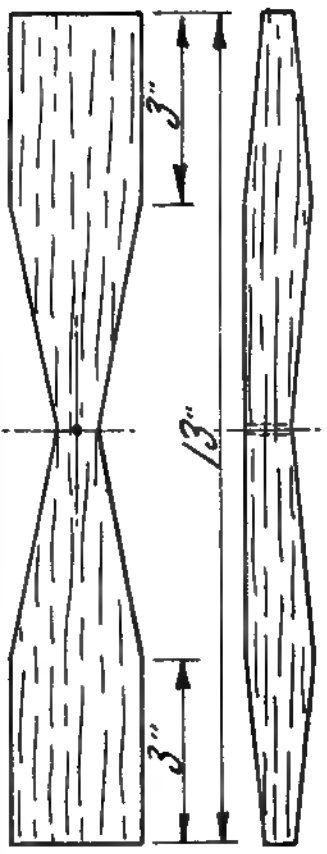
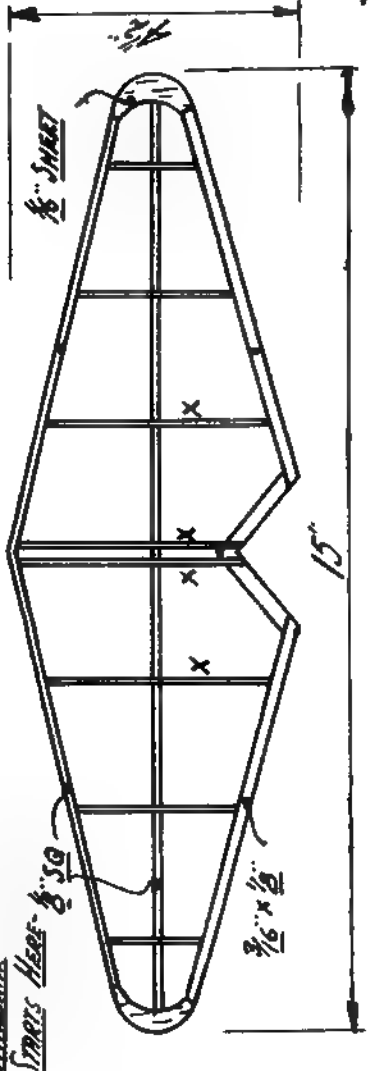
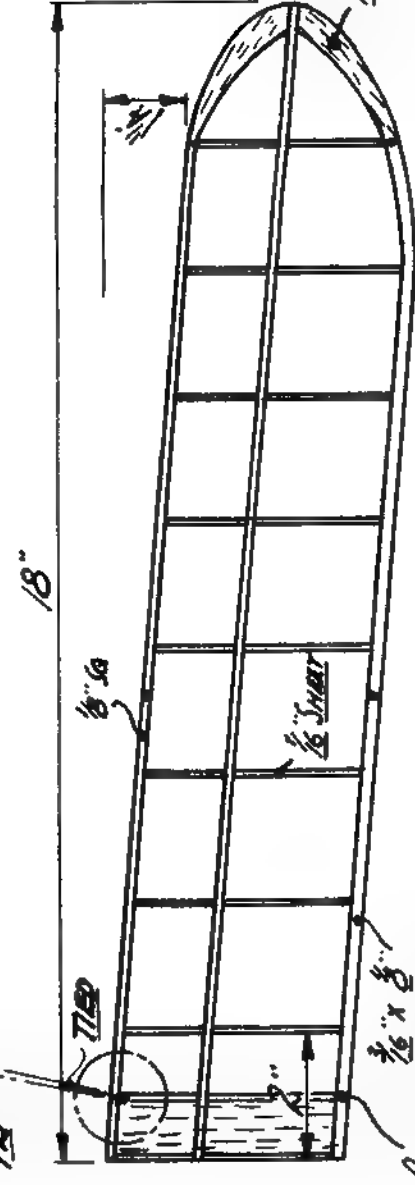
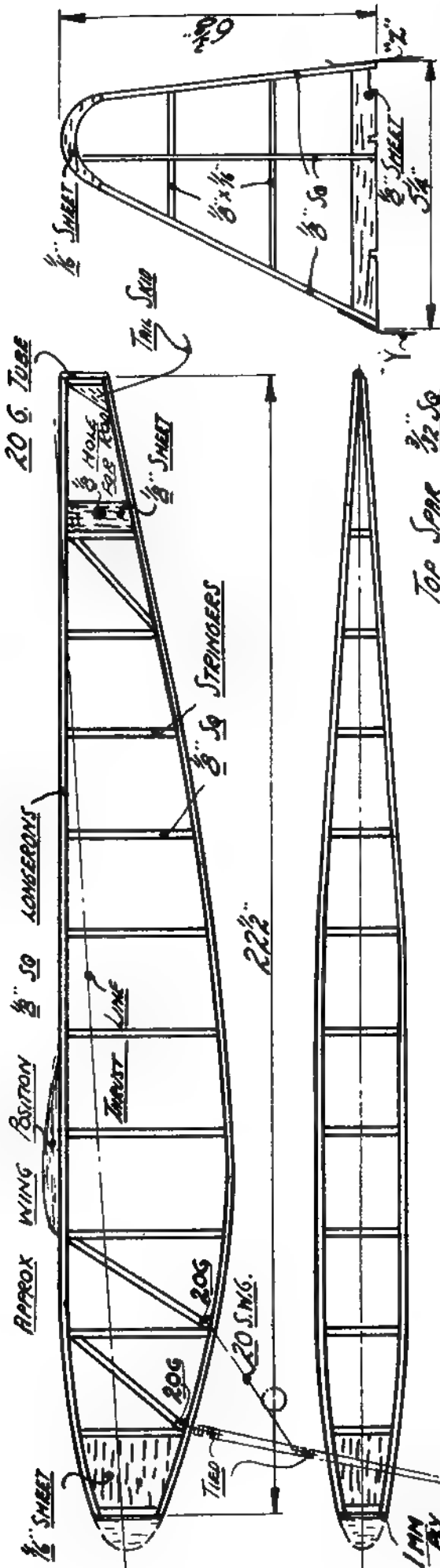
Block balsa with  $\frac{1}{2}$  in. strip at back for plugging into fuselage. A tensioner and free-wheel, as shown, or of any other type, is fitted.

### Power.

Eight strands (4 loops) of  $\frac{3}{16}$  in. by 1-80 in. flat rubber 86 in. long. Maximum turns are 1,100 when well lubricated and stretched out.

### Testing Model.

See that everything is in perfect alignment, and fixed securely with wing in position shown. Glide model; if it stalls move wing back; if it nose-dives move wing forward. When it glides nicely to a proper landing give 200 turns, launch, and watch results. If model behaves satisfactorily, increase turns with each flight until maximum turns have been obtained.

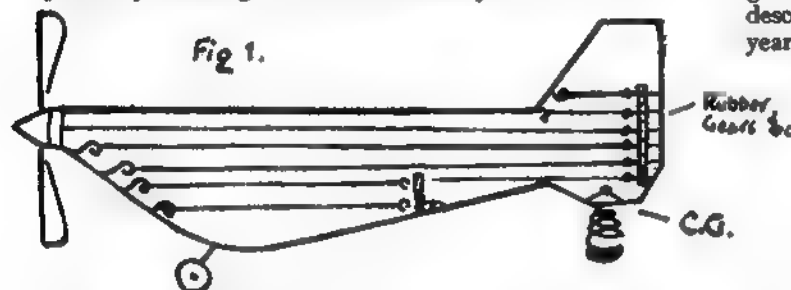


~THE WREN~ ~PROP BLANK~ ~SCALE~ 1/32\"/>

# AN EXPERIMENTAL MODEL By T. L. TOSELAND

I AM a beginner. A month ago I hardly knew model aeroplanes existed, but since then I have waded through all the available literature and have come to this conclusion. New ideas are wanted, and it must fall on someone, like myself, with an open and untrammelled mind, to put things right.

Here, then, is an account of my machine—not a finished product as stereotyped as all the rest, but a machine involving hours of experimental work, done primarily for the good of the community.



To begin with, there's that bugbear C.G. No one seems decided where to put it. Some experts fasten it under the centre of the wing and argue furiously with the ignorant souls who wish to put it farther aft. I decided to scrap it altogether. Here I came up against red tape. I was plainly told that I should be disqualified as soon as I entered the competition field unless I incorporated it somewhere in the design. I sighed over the trials of the pioneer, and finally cemented on in the tail, well out of harm's way (see Fig. 1).

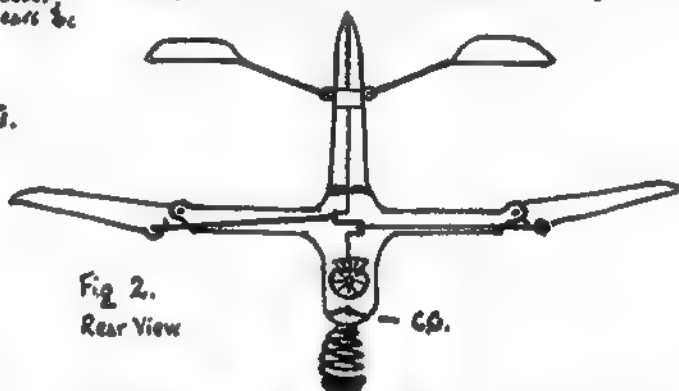
After a thorough study of airfoils, I watched my pigeons anxiously, realising how hopelessly inefficient they were and dreading that they would stall or spin. There they were, executing the most dangerous antics, defying every known law, without a Clark YH or R.A.F.28 in the whole flock. But they managed somehow—I suppose it must be blind chance or thermals.

However, in case the birds are right, I have included some sections in the wing, based on their inefficient sections, together with every known section of repute. No airfoil is perfect, and the combination of the virtues of one should compensate for the vices of its nextdoor neighbour, as no two adjacent sections are alike. They vary from a slow speed Lippisch to a Bambino 7. The estimated speed worked out to either 100 or 1.9 m.p.h., as I mislaid the decimal point half-way through an involved

calculation, and the above sections were included to be on the safe side.

Again in case the birds are right, I based the fuselage on the pigeon and filled it with rubber and gears (see Fig. 1).

On completion I launched it from the top bedroom window, and timed the glide. It did the 82 ft. in one second. Unfortunately it damaged its tail and the C.G. fell out in the long grass. Nevertheless, I was staggered to find that I had achieved perfectly vertical descent, something these experts had been working on for years. I fitted a strong coil spring on the tail to act as a shock absorber, and riveted the C.G. in more firmly and tried it R.O.G. under full power.



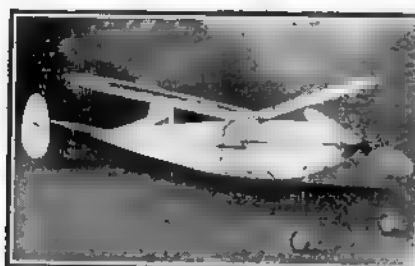
A most amazing thing happened. It lifted its front legs—I mean landing wheels—about a foot from the ground and kept them there for fifteen minutes until the power died down, and did slow circles, using the tail as a pivot. Half my troubles were over. I could get the front to rise, and the only problem now was to get the tail into the air at the same time. The machine was perfectly stable, and the duration exceeded my expectations.

Now I am redesigning the rear end, being compelled to sacrifice some of the rubber, and therefore the duration, to work the ornithopter stabiliser and the somewhat unorthodox rudder-cum-autogyro (see Fig. 2).

I hope to have it finished for my journey to America with the rest of the English team. I suppose we *must* take a team, in case anything unforeseen happens to my machine . . . . .

\* \* \* \* \*

[We regret that we have heard nothing further from our contributor.—Ed.]



ARE YOU LOOKING FOR AN OUTSTANDING MACHINE?

YOUR NEEDS WILL BE SATISFIED WITH "THE VITRACE"

Length 37". Span 44"  
Weight 82 oz. Maximum Duration Non-Swinging 3 min. (conforms to "39" Wakefield rules).

Kit includes:—Ball Race, R.T. bobbins, rubber lubricants, dope, Hi-gloss Bash and prop. blank. Post Free 16/6. Finished prop 2/- extra. Blue print only 3/6 post free.

Other Prints and Kits  
"The Rocket," "Floerwing," "Firefly,"  
"Albatross," etc.  
Send 1/6d. stamp for list

**SUPER MODEL AIRCRAFT SUPPLIES**

(E. W. EVANS)

228 Wellingsborough Road — NORTHAMPTON

**KEEP THIS COUPON TO  
ATTACH TO YOUR  
ENTRY FOR OUR PHOTO-  
GRAPHIC COMPETITION**

*Coupon No. 3—September*

Kindly mention **THE AERO-MODELLER** when replying to advertisers.

# STOP PRESS NEWS—

## Results of WAKEFIELD CUP Competition

Held in America, on August 7th, 1939

1st Dick Korda, U.S.A., 950.2 sec.

2nd F. Bowers, Canada, 272.66 sec.

3rd M. Giovanni, France, 217.53 sec.

4th Bob Copland, Great Britain, 211.3 sec.

A fully illustrated report of this Competition will be published in our next issue.

### Bowden International Trophy

	Points.
1. J. Coxall, Hayes ... ..	200
2. E. Ross, Northern Heights ... ..	196
3. R. Stubbs, Essex ... ..	181
4. F. Almond, North Kent ... ..	135
5. A. Poulton, Luton ... ..	130
6. F. W. Lawrence, Bromley ... ..	129
7. H. N. P. Rowe, Bournemouth ... ..	128
8. { A. Wilson, Hayes ... ..	80
{ J. Wallens, Croydon ... ..	80
9. N. P. Reason, Leeds ... ..	80
9. N. A. Oldham, Essex ... ..	78
10. { C. R. Jeffries, Midland ... ..	75
{ D. R. Byfield, Hayes ... ..	75
11. C. Greyer, Northern Heights ... ..	70
12. { R. Heppenstall, Leeds ... ..	20
{ J. R. Blunt, Brighton ... ..	20
12. { F. Harris, Farnborough ... ..	20
{ O. R. Robertson, Hayes ... ..	20
13. J. Worden, T.M.A.C. ... ..	18
14. { G. Rickard, Bournemouth ... ..	15
{ H. Norman, junr., Hayes ... ..	15
14. { J. Forster, Bromley ... ..	15
{ G. E. Gardner, Birmingham ... ..	15
14. { G. Mahony, Hayes ... ..	15
{ C. Fleming Williams, Hayes ... ..	15
15. { O. E. Hemsley, Brixton ... ..	14
{ R. Charles, Essex ... ..	14
15. { F. Hemsall, Leeds ... ..	14
{ A. B. Stevens, Woking ... ..	13
16. L. Longstaff, Northern Heights ... ..	13

### Sir John Shelley Cup

#### RESULTS.

1. P. Rowe, Bournemouth ... ..	128.75
2. E. Ross, Northern Heights ... ..	126.7
3. F. Almond, North Kent ... ..	124.5
4. J. Blunt, Brighton ... ..	123.6
5. D. R. Byfield, Hayes ... ..	121.5
6. H. W. Stubbs, Essex ... ..	117.5
7. C. R. Jeffries, Midlands ... ..	115.9
8. J. E. Colyer, Littlehampton ... ..	115.4
9. A. Wilson, Hayes ... ..	110.5
10. J. G. Wallens, Croydon ... ..	109.1
11. J. Coxall, Hayes ... ..	106.8
12. A. E. Tippet, Shorts ... ..	103.3
13. E. Newport, North Kent ... ..	98.5
14. N. A. Oldham, Essex ... ..	96.3
15. H. Norman, Hayes ... ..	81.7
16. G. M. Rickard, Bournemouth ... ..	79.0
17. A. Poulton, Luton ... ..	72.5
18. D. Lawrence, Bromley ... ..	67.5
19. J. Worden, T.M.A.C. ... ..	66.5
20. J. E. Pitt, Bournemouth ... ..	53.7
21. R. Heppenstall, Leeds ... ..	37.3
22. C. Greyer, Northern Heights ... ..	35.7
23. N. P. Reason, Leeds ... ..	28.8
24. E. Crabbe, Hayes ... ..	28.5
25. K. Robinson, Shorts ... ..	23.0
26. G. E. J. Curtis, Shorts ... ..	14.3
27. P. W. Clempson, Hayes ... ..	13.0

### THE NATIONAL CUP

	Total av. sec.
1. North Kent ... ..	590.175
2. Hayes ... ..	576.775
3. Kingston ... ..	562.825
4. Northern Heights ... ..	520.075
5. Luton ... ..	515.125
6. T.M.A.C. ... ..	488.675
7. West Sussex ... ..	454.825
8. P.M.A.L. ... ..	430.825
9. Brighton ... ..	420.825
10. Blackheath ... ..	418.40
11. Hawker ... ..	387.375
12. Edgware ... ..	379.85
13. Surrey ... ..	368.325
14. Barnes ... ..	360.80
15. Harrow ... ..	343.65

	Total av. sec.
16. Lancs ... ..	332.275
17. Bristol ... ..	313.05
18. General Aircraft ... ..	285.050
19. Aldersbrook ... ..	278.95
20. Dartford ... ..	272.80
21. Wanstead ... ..	241.50
22. Wembley ... ..	235.875
23. Victoria ... ..	225.075
24. City (Birmingham) ... ..	158.85
25. Dulwich ... ..	116.90
26. Hampton Hill ... ..	113.30
27. Shorts ... ..	76.15
28. Fife ... ..	37.25
29. Midland ... ..	

### Women's Challenge Cup

	Av. sec.
1. Mrs. Baines, Dagenham ... ..	163
2. Mrs. Weller, Surrey ... ..	111.16
3. Miss Lundy, Northern Heights ... ..	96.6
4. Mrs. Clifford, City (Birmingham) ... ..	87.6
5. Mrs. Hill, Lancs ... ..	78.6
6. Miss Offord, West Sussex ... ..	67.06
7. Miss Wheatley, Hayes ... ..	61.0
8. Mrs. Rees, Northern Heights ... ..	36.0
9. Miss C. Clifford, City Birmingham) ... ..	23.5

### Frog Senior (International) Cup Finals.

	Points.				
	A.	B.	C.	D.	Total.
1. J. R. Vanderbeek, T.M.A.C. ...	10	nil.	25	80.15	115.15
2. P. Montgomery, Fife ...	25	15	15	44.0	99.0
3. E. Chasteneuf, Blackheath ...	20	5	20	49.1	94.1
4. — Guest, General Air ...	45	5	10	10.075	70.075



# AT THE SIGN OF THE WINDSOCK



Premier Aeromodel Supplies, of 2a Hornsey Rise, London, N.19, in sending us their latest catalogue, point out that their telephone number was incorrectly given in their last month's advertisement. The correct number is ARCHway 2876.

The Premier Guide runs to 86 pages, and includes a page of "wise words" to beginners from Bob Copland, world record holder, and member of the British 1989 Wakefield team.

The Guide contains a very detailed list of accessories of all kinds, together with full particulars, with illustrations, of a wide range of models, most of which have been designed by Mr. C. A. Rippon, Premier's manager, who has had over thirty years "in the game." "Rip" is well known for his kindly, even "fatherly," way of advising all visitors to 2a in the building and flying of their models, and whenever we pay a call we invariably find him surrounded by a crowd of youngsters "listening in" to him.

Mr. F. R. Barnard, who is the proprietor, is also chairman of the Model Aircraft Trade Association, and extends to all readers an invitation to visit the Premier Stand at the forthcoming *Model Engineer* Exhibition, where there will be a full range of models on sale, together with examples of two new models which will be introduced at the exhibition.

\* \* \* \* \*

There is an old "tag" which tells us that the world

will flock to the supplier of any article or commodity which promises more to the purchaser, either in greater usefulness, value, or efficiency, over and above that which has previously been available.

This saying appears to be being proved by The Studiette Patent Balsa Tool, which was produced to supersede the use of razor blades for balsa cutting in model-making, and of which tools more than 85,000 have been sold in Great Britain during the last 12 months.

The attention of other countries has been attracted to this tool, which is now sold through distributors in Northern, Central, and Southern America, Australia, South Africa, France, Holland, Denmark, Norway, and Sweden. Full particulars can be obtained from the advertisement on page 582, of Studiette, Kent Street, Birmingham.

\* \* \* \* \*

On page 628 we publish an advertisement on behalf of Super Model Aircraft Supplies, 220 Wellingborough Road, Northampton. A new model is announced, the "Victrace," designed by that well-known aero-modeller, E. W. Evans. Mr. Evans has already achieved considerable success this year with his "Rocket," which, it will be remembered, won the Clyde Model Dockyard Trophy, as reported in our last issue. The "Victrace" has twin rudders mounted at the tips of the stabilizer, which has a built-in dihedral, and the whole design conforms to the Wakefield formulae.

The fuselage is of rectangular section, with short triangulated sections along the top and bottom. Whilst therefore it is simple and easy to build, the fuselage has a pleasing profile. The main 'plane is of constant chord with rounded tips, and the whole design is quite straightforward.

We abstract this information from the full size plan sent us by Super Model Aircraft Supplies, and full particulars of the kit are given in their advertisement in this issue.

\* \* \* \* \*

On page 588 of our last issue, and on page 644 of this issue, are advertisements on behalf of A. Burge, Martin's Crossways, Shenfield, Essex, who advertises a wide range of propellers, both in balsa and hard wood. Samples of the balsa propellers have been sent to us for examination and also a small hardwood propeller. This latter is of good quality workmanship and of standard design. The balsa airscrews are beautifully made and very light. Those we have had are true in pitch and balance and of thin blade section, and we feel that they would give good results. Trade and retail enquiries are invited.

\* \* \* \* \*

We regret that an advertisement on behalf of Messrs. Bristol Model Aero Supplies was omitted from our last issue; this month this firm's advertisement appears on page 641, and in it are given prices and details of two new kits.

The "Setter" is a low wing monoplane, with a semi-streamlined fuselage, and a tapered wing. The kit contains a finished propeller and a full-size blue-print, and the model is an easy one to build up. The "Falcon Plus" is a geared model, and has been designed specially for contest work. It is a high-wing model, and an

extra amount of rubber can be used in it, due to the use of gears. The gearbox construction is claimed by the makers, whose address is 51 Colston Street, Bristol 1, to entirely remove any chance of stripped gears.

A "Skybird" flying contest is being organised by District Commodore D. W. Bullocke, of Club 517, Torquay, with the backing of headquarters. The competition is open to all Skyleaguers in the British Isles, and entry forms can be obtained from D. W. Bullocke, Royal Garage House, Torwood Street, Torquay, Devon. Application must be accompanied by an entry fee of 8d, plus stamped addressed envelope. The competition will be open until October 31st, 1939. Models eligible are the Skybird "Sturdy" and "Speedy," for duration flights, best average of three flights, all times to be checked and signed by not less than two responsible persons. At the close of the competition all entry forms will be sent to Skybird League Headquarters for final judging. A silver cup, presented by D. W. Bullocke, also Skybird kits value one guinea, for the best results from either "Sturdy" or "Speedy" models, will be awarded. Three additional awards will be presented for the next best results with a "Sturdy" model, and three similar awards for the "Speedy" model. In each section the awards will be: 1st, Skybird kits value one guinea; 2nd, Skybird kits value half-guinea. 3rd, Skybird kits value 7s. 6d. Skybird League Certificates will be presented with each award.

On page 596 appears an advertisement on behalf of

Model Aero Supplies, 146 Spring Hall Lane, Halifax, who enter the trade with a Wakefield model, "Flying Minutes." Designed by Len Stott, well-known member of the Halifax Club, this model has achieved success by winning for Messrs. Stott and Norman Lees two places in the British 1939 Wakefield team. Model Aero Supplies offer a full-size blue print, or a complete kit of parts, for building the model exactly as the original. We understand that the kit is very complete, and to M.A.T.A. specification as regards material. The instruction sheet, a copy of which we have seen, is nicely set up and should be very useful.

Messrs. H. Samuel Ltd., whose advertisement appears on page 596 of this issue, invite club secretaries to write for a copy of their illustrated catalogue of latest designs for presentation cups, badges, medals, etc. All enquiries should be addressed to Market Street, Manchester 1. and mention of THE AERO-MODELLER will ensure prompt attention.

On the same page, Ashton Model Aero Supplies, 58 Oldham Road, Ashton-under-Lyne, Lancs, offer an attractive kit of the "Sprite," a 33 in. span duration model. We have examined one of these kits, and are satisfied that it is good value for money. The airscrew is fully finished, as also the free-wheel and rubber tensioner. The kit contains all necessary material of M.A.T.A. grade, and should make up into a very nice model.



Full particulars of the M.A.T.A. may be obtained from the Secretary, Mr. C. J. Bradstreet, 92 Durham Road, East Finchley, London, N.2.

The Model Aircraft Trade Association announce that Messrs. Model Aero Supplies, 146 Spring Hall Lane, Halifax, Yorks., and Messrs. J. W. Wood and Son, 20 Lower King's Road, Berkhamsted, Herts, have recently been elected members.

The Association has recently added an "Associate" class to its membership. Those retailers of model aircraft and accessories applicable to the trade, but whose business embraces the sale of other articles, are eligible for this class of membership.

The Association has entered into an arrangement with the Board of Inland Revenue, whereby members are now able to include as an "expense" their subscriptions, and so obtain income-tax relief.

Following are the minimum retail prices of balsa wood, as fixed by the Association. All members adhere to these figures, and the quality of all material is guaranteed as being of first grade:—

#### MINIMUM RETAIL PRICES OF Balsa Wood.

3 ft. lengths.

$\frac{1}{16} \times \frac{1}{16}$	...	2 for 1½d.	$\frac{1}{8} \times \frac{1}{8}$	...	2d.
$\frac{1}{8} \times \frac{1}{8}$	...	2 for 1½d.	$\frac{1}{4} \times \frac{1}{4}$	...	2d.
$\frac{1}{4} \times \frac{1}{4}$	...	2 for 1½d.	$\frac{1}{2} \times \frac{1}{2}$	...	2½d.
$\frac{1}{2} \times \frac{1}{2}$	...	2 for 1½d.	$\frac{3}{4} \times \frac{3}{4}$	...	3d.
$\frac{3}{4} \times \frac{3}{4}$	...	1d.	$1 \times 1$	...	3d.
$1 \times 1$	...	1d.	$1 \times 1\frac{1}{2}$	...	3d.
$1\frac{1}{2} \times 1\frac{1}{2}$	...	1d.	$1\frac{1}{2} \times 2$	...	4d.
$2 \times 2$	...	1d.	$2 \times 2\frac{1}{2}$	...	4½d.
$2 \times 2\frac{1}{2}$	...	1d.	$2\frac{1}{2} \times 3$	...	5d.
$2\frac{1}{2} \times 3$	...	1d.	$3 \times 3$	...	5d.
$3 \times 3$	...	1½d.	$3 \times 3\frac{1}{2}$	...	6d.
$3 \times 3\frac{1}{2}$	...	1½d.	$3\frac{1}{2} \times 4$	...	6d.
$3\frac{1}{2} \times 4$	...	1½d.	$4 \times 4$	...	7d.
$4 \times 4$	...	2d.	$4 \times 4\frac{1}{2}$	...	7d.
$4 \times 4\frac{1}{2}$	...	2d.	$4\frac{1}{2} \times 5$	...	8d.

4 in. and 6 in. strip balsa at double 2 in. and 3 in. prices respectively.

No reduction for one dozen lengths.

#### Balsa Block.

	3d. per ft.	8d. per 3 ft. length.
$\frac{1}{16} \times \frac{1}{16}$	...	9d. "
$\frac{1}{8} \times \frac{1}{8}$	...	10½d. "
$\frac{1}{4} \times \frac{1}{4}$	...	10½d. "
$\frac{1}{2} \times \frac{1}{2}$	...	1/1 "
$\frac{3}{4} \times \frac{3}{4}$	...	1/3 "
$1 \times 1$	...	1/9 "
$1 \times 1\frac{1}{2}$	...	2/- "
$1\frac{1}{2} \times 1\frac{1}{2}$	...	2/3 "
$2 \times 2$	...	2/9 "



*Bob Copland's model takes off on its second flight at the Wakefield Trials.*

**Y**O-HEAVO, and a barrel of fun! And could I cuss all of you this month for making me return my thoughts to aero-modelling. Still, I was about ready to return to the fold, and the sea and air has stimulated the old think-box—(yes, I know there are doubts as to my actual possession of such a commodity), and if I lapse into sea terms instead of airiness occasionally, blame the annual event, which, in reply to many solicitous wishes from many of you, has been very enjoyable in spite of this "real old English summer!"

Many things have happened since our last chat, the most important being, of course, the finals of the King Peter Cup competition, and what an affair that was. Fully reported elsewhere in this issue, it only remains for me to give full marks to the organisers and competitors who, in spite of difficult, and at times almost unreasonable, circumstances, made the event something to be remembered. The final success of the English team in being placed second was gratifying, as well as entirely unexpected, but I hope I may be excused of any propaganda if I sympathise with the German contingent who, from a consistency point of view, won hands down. In fact, I think it a great pity that certain of the German machines were not recovered, as this would have made a big difference to the final results, and I hope that their models have fallen into responsible hands.

Congratulations to France on their win, and believe me, I'm quite looking forward to another trip to Paris next year! As M. Guillet said: "I come in 1937, we win the Wakefield Cup. I come in 1939, we win the King Peter Cup. I want to come again!"

The send-off of the Wakefield team was one to be remembered, and though writing this a week before the flying takes place, I hope I am not being too optimistic in saying that the Cup is already ours.

Much has been said of the generosity of our patron and staunch friend, Lord Wakefield, and it was my great pleasure to meet this respected gentleman at the dinner following the King Peter event. His generosity we all know of, also his wide and benevolent wisdom in many matters, but it was with almost a feeling of unreality that one met and talked with this gentleman, who has long been almost a legend with aero-modellers. My own feeling was—and I know from conversation that it is a feeling shared by many—that here was not a man of great wealth, great possessions, and great name, but one who in the final analysis will be remembered for his great kindness. My lack of words does not allow of a true recording of my feelings, but I can only state that to have

met his lordship was one of the proudest moments of my life, and I shall always remember him as a "man's man."

A note from my old friend, Father Amiard, asks me to "tell the world" that he is organising a meeting at Fliers, on September 17th next. On the next page is published a photo of a trophy offered to the winner of the Petrol 'Plane Competition. Enquiries should be addressed to Father Amiard, c/o Saint Aloysius Presbytery, 80 Phoenix Road, London, N.W.1.

The Area Scheme is at last receiving its fair share of support, and it is remarkable how many reports this month contain words of praise for the far-sightedness of the innovation, and this, in some cases, from those who have been very lukewarm in the past. Can we look forward to the time when the whole country will be working together as an amicable whole? I am sure it can be done, and it only requires the initiative in some quarters for complete success. Get to it you areas that are still "waiting on bites"—it is far better to have moved yourselves than for an official enforcement to take place.

It is a great pity that business prevents Mr. Almond taking his place in the Wakefield finals, but he is evidently confident of the capabilities of Mr. Gibson, whom he nominated as proxy flyer for his model. According to the Council report in this issue, and various items of news I have heard, some of those attending these meetings suffer from very short memories, and I'm afraid a great deal of valuable time is lost in consequence.

I see that the North-Western Area proposition for the holding of a qualifying round for the 1940 Wakefield Trials, is referred to the clubs for discussion, and will be brought up again at the meeting held in September. This is a matter that requires careful consideration, and I for one would be glad to see proper publicity given to the pros and cons of such a scheme.

One bright youth has ventured a guess at my identity this month, but is he way off the track! May I point out to him that all my Council matters are taken from the report forward by the Press Secretary? Am I right, sir? And you've no idea how swell-headed I'm getting with the support and good wishes I have been receiving. You know, I shall begin to think some of you regard the poor old Clubman with affection! I'm going out and buy me a halo!

Well, shall we see what you all have to say this month. One thing I'm glad to see, is the way that you Press Secs. are learning to cut out the irrelevant items. It makes my task a lot easier, and I'm sure is also saving you much time and brain-wracking. Keep up the good work, and to those of you who have recently taken on the onerous job of "publicity agent," write only on one side of the paper, and type it out if at all possible.

By poetic justice, this month sees the LEEDS M.F.C. report on the top of the pile—they were at the bottom last month. Their petrol contingent have been doing good work lately, Messrs. Reason and Anderton placing 8rd and 4th respectively in the Concours Class at the Northern Rally. Mr. Reason following this up by placing

2nd in the flying class. At the Beverley Rally Messrs. Anderton, Heppenstall, and Veaville took the first three places in that order, while the Chairman, Mr. Bastow won the Wakefield Class, with Anderton bagging third. Not a bad day's outing one way and another, though I understand Mr. Anderton found it rather costly, breaking the crankshaft on his petrol job through an argument with a tree! In the "Anderton Cup" event, based on the best average in S.M.A.E. contests, very close running is going on between Messrs. Alberici (junior), Anderton, and Reason.

The BARNES AND D.M.A.S. recently held a novel contest, in which teams of three took part, each team with one flight each to aggregate 180 sec. As any machine was eligible, it can be imagined what varied times the last flyers had to make up (or keep down, as the case may be). I recommend other clubs to try this out. Of course 180 sec. is only a nominal figure, and could be varied.

(Correction to last month's report: Winner of the Prahli Cup was Mr. G. Blackman).

Mr. J. A. Hay has raised the "under 200 class" in the MANSTON AND D.M.A.C. to 85 sec., the model still being missing. Scale model flying is receiving a lot of attention in this group, flights of 20 seconds being fairly common.

The WHITSTABLE, TANKERTON AND D.M.A.C. are holding a gala day on August 20th, at which many types of contests will be held. (Pity you didn't let us know about this last month, fellows; there is no time for proper publicity. Please remember that you must think at least a month or more ahead when requiring suitable notices of such events). These chaps fly on a field alongside the main coast road to Margate, and the crowds are terrific at times.

Mr. E. W. Evans, of the KETTERING AND D.M.A.S., won the club Quarterly Shield with an average time of 98 sec., also the Wakefield type event, whilst Mr. Peacock won the junior class. Mr. J. W. Cragg holds the club R.O.G. record with a time of over 4 min.

Members of the EGHAM AND D.M.F.C. had an enjoyable outing to Brooklands aerodrome, and S. Millgate, the winner of a duration event held there, received a fine flight to Brighton and back for his skill.

The LIVERPOOL M.A.S. competition for the Chairman's Cup was won by Mr. B. Haisman, with 175.6 points, Messrs. Crompton and Kidd following close behind. This event is for machines of realistic appearance—and is a type well worth cultivating.

A new flying ground acquired by the BRISTOL AND WEST M.A.C. was given a try out with a full programme of events. (I am told that what appeared to be about 110 per cent of the Gloucester club membership turned up to witness!) Results were:—

#### BIPLANE CONTEST, FOR THE SYNG CUP.

- |                  |     |     |                   |
|------------------|-----|-----|-------------------|
| 1. C. W. Needham | ... | ... | 115.8 sec. R.O.G. |
| 2. R. T. Howse   | ... | ... | 107.8 " "         |
| 3. C. S. Wilkins | ... | ... | 105.6 " "         |

#### WAKEFIELD CONTEST FOR THE PACKER CUP.

- |                   |     |     |                   |
|-------------------|-----|-----|-------------------|
| 1. R. T. Howse    | ... | ... | 108.6 sec. R.O.G. |
| 2. C. T. Jennings | ... | ... | 98.6 " "          |
| 3. A. H. Lee      | ... | ... | 94.8 " "          |

(Waste of time holding these two contests, as in both cases the cups went to their last year's winners!)

#### FRESHMEN'S AND JUNIORS CONTEST.

- |                 |     |                                |
|-----------------|-----|--------------------------------|
| 1. John Dickens | ... | 68.8 sec. R.O.G. Av. (Junior). |
| 2. Ken Howse    | ... | 61.7 " " " "                   |

The most popular event of the day, which attracted 88 entrants, was the "Average of 5 Flights Contest," for five quids' worth of petrol engine, presented by D. Fry, Esq. This started at 6 o'clock in the rain, and resulted as follows:—

- |                  |     |                                 |
|------------------|-----|---------------------------------|
| 1. C. S. Wilkins | ... | Average of 5, 146.0 sec. R.O.G. |
| 2. K. Howse      | ... | " " 128.8 " "                   |
| 3. D. J. Penny   | ... | " " 112.8 " "                   |

The combination of five flights and the time of the day was intended to knock out the effect of thermals, and it did—almost! About 8 o'clock there was a crop of them, but no fly-aways, fortunately.

The Second Annual Invitation Meeting, organised by the HORNCHURCH M.A.C., resulted:—

(1) Popular Contest: 1, L. Henbest, Hornchurch, 88½ sec., nearest to 85 sec.

(2) Open Duration: 1, R. Bowyer, average 96½ sec., Hornchurch; 2, J. Howard, average 85½ sec., Elm Park; 3, F. Henderson, average 78½ sec., Wanstead; 4, P. Aldridge, average 76½ sec., Hornchurch.

The best junior in this competition: S. Billingham, average 51 sec., of Hornchurch.

(3) Gliders, F.A.I. rules: 1, F. Baines, average 49½ sec. Dagenham; 2, B. Smith, average 82½ sec., Woodford.

(4) For Wakefield models only: 1, F. Baines, average 89½ sec., Dagenham; 2, P. Aldridge, average 80 sec., Hornchurch; 3, D. Elmes, average 68½ sec., Ilford.

The main event of the day was the team contest, which was won by Hornchurch for the second year in succession, by a narrow margin of 9½ sec.

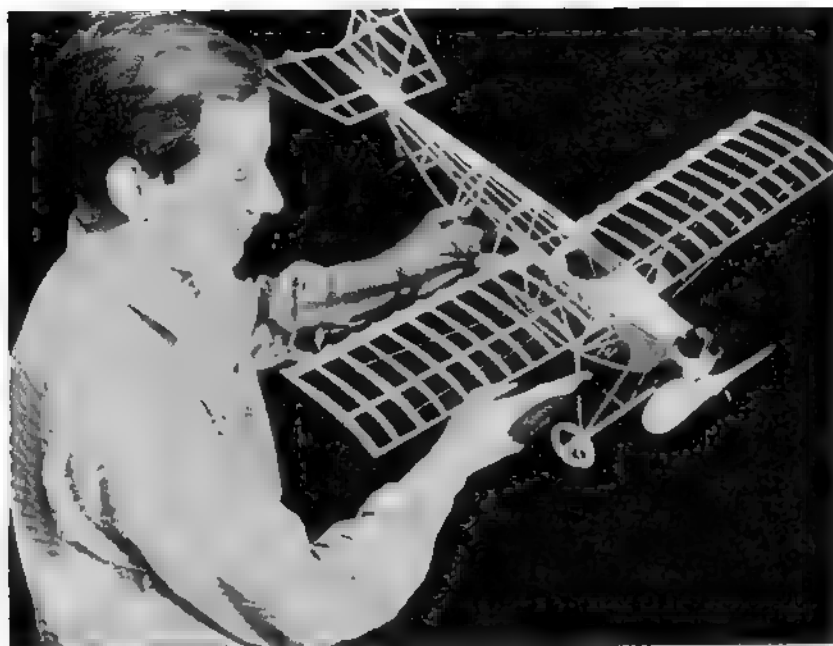
A fine photo sent by this club shows the Grumman "Gulphawk," built by E. W. Dyer. This job is 20 in. span, weighs 4 oz., and took three months to build. Looks a nice job, too!

The SUNDERLAND M.A.C. have acquired a 15-acre flying field, and are now steadily progressing with duration models, Mr. Holdstock being most consistent.

SOUTHPORT AND D.M.A.C. are to be congratulated on their successes at the Northern Rally, Messrs.

*The trophy offered by Father Amiand for the Petrol 'Plane Competition at Flers on September 17th next.*





*A flying scale model of a 1911 Caudron, built by Mr. G. W. Day, of the Northern Heights Club, which won the "Flight" Trophy for 1939.*

Halsall, Catterick, and Crusham gaining 2nd, 5th and 6th places in the H.L. event, the first-named at the same time putting up the Southport Club record for under 200 in. class to 8 min. 25 sec. Mr. Crusham has also raised the towline glider figure to 8 min. 41 sec.

Another club to turn up in force at the Northern Rally was the NEWCASTLE (Staffs.) AND D.M.A.C., though with not quite the success that the Southport chaps obtained. However, in spite of getting soaked, everyone had a good time. Mr. Hudson, in the throes of holidaying, managed to lose his model after 8½ min. O.O.S., the model being returned by a stranger after having been given up for lost. Result: A prospective new member!

Recent successes of the BRIGHTON AND D.M.A.C. include:—

Northern Heights Gala: Scale Concours, H. Towner; Novelties, H. J. Finch.

Hamley Trophy: 8rd, F. S. Thomson.

Club events: Nomination, A. Smith; Speed, R. V. Bennet; Lucas Cup, J. Tugwell (8rd successive year); Petrol Competition, J. V. Lucas.

In this latter event, with a 45 sec. engine run, Mr. Lucas clocked 145 seconds, which is pretty good going.

Mr. F. Chapman, of the WOKING AND D.M.A.C., has been wiping things up in that area lately, winning the H.L. event with 110 sec., and the Vice-President's Cup. Mr. Gunner was runner-up in both cases. In the latter event models must weigh 1 oz. for every 20 sq. inch wing area, and many models were to be seen with all types of "make-weight" attached, pliers, lead, clay, etc. At a successful show of models at a local sports fete a gentleman, labelled as "official" walked up, tucked four of the club pots under his arm, and proceeded to march off. Much hair-tearing among the Wokingites until someone explained to said official that they were not the property of the sports folk. Collapse of official!

The BOLTON M.A.S. chaps have been up to the eyes in things getting ready for their rally. Time out was taken to visit the Northern Rally, however, with good results. Mr. Lancaster winning the R.O.G. event, collecting with same the Lancs Aero Cup. One flight was over 10 minutes, so you see how it was done!

HALIFAX was once again the cry that rang out over Woodford Aerodrome at the end of the Lancs rally. For the second time since its inception last year, THE AERO-MODELLER Cup for the champion of the rally was won by a Halifax member, this time by Dennis Lees, a junior. This is very gratifying, and should certainly encourage other youngsters to crack in—you never know what you can do unless you try! He has shown very consistent form throughout the season, having previously won the Short's Cup event. He also put up the best time of the day, 17½ min. out of sight, which he hopes is the best time this year. "Under the very severe handicaps that prevailed, we should like to extend our sincere congratulations to the secretary and officials of the Lancs Club for putting on the best rally yet that the North has seen."

Mr. Beasley, of the LEAMINGTON AND WARWICK M.A.C. would appreciate news of his HWB 100, lost recently after an O.O.S. flight of 9 min. 45 sec. Launched from Warwick Racecourse, this was last seen heading in the direction of Stratford-on-Avon.

Publicity received through the selection of Messrs. Stott and Lees for the Wakefield Team has brought an influx of members to the club, and it is sincerely hoped that one of them may be successful in bringing the "pot" back. The Plugge Cup lead remains with Halifax, and with concentration on the remaining two rounds, should once again find a resting place in the North.

The monthly competitions of the CHINGFORD M.F.C. resulted:—

#### "ALL-IN" COMPETITION.

1. Mr. Vaughan, average 8 flights, 86½ sec.
2. Mr. Gallop, average 8 flights, 86½ sec.

#### NOMINATED TIME.

Won by Mr. Hodgson. Nom. time, 50 sec.; actual time, 52½ sec.

#### SPOT LANDING.

1. Mr. Chandler (100 yards from spot!)

#### MASS LAUNCH.

1. Mr. Millar.

Further to my remarks last month, I am glad to note that the two Wirral clubs have combined under the title of the WIRRAL M.A.S., the combined membership being about 40. A petrol model section is being formed by Mr. R. Tunstall.

Mr. MacBean, of the BEDFORD M.A.C., has the whacking of the rest at the moment, having won three out of four events at a recent meeting, the other winner being Mr. Cox.

Yet another club to do well at the Northern Rally was the MACCLESFIELD M.A.S., gaining 8rd in both the H.L. and R.O.G. classes. (I believe this club were second to Halifax in the team event). At Warrington, two firsts, a second, third, and a fourth were gained.

Whilst on the subject of the Northern Rally, we have the LANCASHIRE M.A.S. report, but as the rally is fully reported elsewhere, it just remains for me here to



*Mr. Lear, a member of the Stockton-on-Tees M.A.C., with his flying scale model of a Heinkel.*

congratulate this club on its evident successful handling of a very difficult meeting, and its all-round general efficiency. The club magazine, edited by this club, is well worth while any one's reading, and is improved this month by some fine cartoons.

The CHESTER M.F.C. report a membership now of 62. (When are you going to affiliate, Chester?) Club records to date are:—

Duration R.O.G. : A. Hamilton Reade, 66 sec.

Duration H.L. : F. Wilde, 160 sec.

Scale : H.L. E. Meredith, 55 sec.

Biplane : H.L. B. Mathers, 45 sec.

On July 9th, at the Kingsbury field, the fourth HARROW M.A.C. "Major Cup" contest was flown, in the course of which Mr. K. Hicks lost another model, 5 min. 7 sec. out of sight, and still climbing under cumulus cloud. The positions in this contest after 4 out of 6 competitions is:—

- |                    |     |     |     |             |
|--------------------|-----|-----|-----|-------------|
| 1. H. K. Hicks     | ... | ... | ... | 140 points. |
| 2. { J. O. Young } | ... | ... | ... | 90 "        |
| { — Pedersen }     | ... | ... | ... |             |
| 4. J. Hands        | ... | ... | ... | 80 "        |

In the similar "Priora Cup" for sailplanes, at the same stage, the positions are:—

- |                     |     |     |     |             |
|---------------------|-----|-----|-----|-------------|
| 1. L. Gent          | ... | ... | ... | 170 points. |
| 2. T. Doman         | ... | ... | ... | 100 "       |
| 3. { N. Blacklock } | ... | ... | ... | 40 "        |
| { R. Bedford }      | ... | ... | ... |             |

An inter-club contest held with the Edgware M.A.C. resulted in the Harrow boys winning with a score of 1,068 points, against the Edgware total of 572. Mr. L. Gent made the best time of 8 min. O.O.S. This club will be holding a gala day on September 8rd. Full details on application.

Scoop! Sir Kingsley Wood has accepted Presidentship to the SPELDHURST M.A.C., and has promised to attend a meeting soon. Efforts are going ahead to raise the wherewithal to become affiliated to the S.M.A.E.

Mr. F. Lowe, of the NOTTINGHAM AND D.M.A.C., raised the club glider (catapult launch) record to 2 min. 55 sec. O.O.S., and won the event while doing so. Mr. J. Stanley won a trade model contest with an exceptional climbing machine.

L. Brearley, of the STREATHAM M.A.C., is another to break club gliding records, pushing the tow-line figure up to 8 min. 36 sec. D. Taylor won the duration contest with an average of 101 sec., losing his machine after a flight of 8 min. A trophy has been presented for monthly competition.

Two new models have appeared from off the drawing board of the SWINTON AND D.M.A.C., one a 36 in. span duration type, the other an autogiro that does! 23 members and friends attended the Northern Rally, and got thoroughly wet—though that didn't damp their enthusiasm.

More records to go by the board are the DAGENHAM



M.A.C. pole flying figure of 100.5 sec., by Mr. Chilcott's model, and the duration figure up to 8 min. 2 sec., by Mr. Barker. Mr. Baines was successful in winning both the Gliding and Wakefield events at the Hornchurch Rally.

The WALLINGTON M.A.C. has been resuscitated, and is off to a good start. Mr. Clarke won the scale model contest with an average of 10 seconds, whilst Mr. Swaffield won the duration event with an av. of 26 sec.

## BRADFORD M.A.C.

### WEST RIDING RALLY of Aeromodellists

**SUNDAY, SEPT. 10th, 1939**

**at BAILDON MOORS, 11 a.m. to 6 p.m.**

#### VALUABLE PRIZES

- ★ H.L. Duration Contest
- ★ T.L. Gliding Contest
- ★ Petrol 'Plane Contest, timed flight
- ★ Concours D'Elegance, all types
- ★ Team Contest—Team of 3 and 1 reserve to be nominated before the day to:—

Mr. R. F. L. Gosling, Hon. Comp. Sec.,  
30 Ferndale Grove,  
Frizinghall, Bradford



At top left we have a photo of a Grumman Gulfhawk, built by Mr. Dyer, of Hornchurch, and in the centre a nice looking duration model, built by Mr. P. Taylor, of Kingston. On the right is a plank fuselage Wakefield model built by Mr. L. Ranson, of the Dagenham Club.

At bottom left is Mr. J. Seddon, of the Clevedon Club, with a nice looking petrol 'plane. Next, and on extreme right, are photos of two members of the Streatham Club, between whom is shown Dennis Lees, of the Halifax Club, with "The Aero Modeller" "Champion of the Rally" Cup, won at the Northern Rally by the model shown in the photo.

Mr. Able, of the CROYDON AND D.M.A.C., has raised the heavy-weight figure to 8 min. 50 sec., Mr. Hills has put the pusher record to 75.6, while Mr. Farrar holds the year's light-weight figure with 4 min. 28 sec., as against last year's figure of 5 min. 15 sec.

The HACKNEY M.A.C. Press sec. bemoans the fact that their models only seem to like the Marshes, as they only get seconds where at home they can clock minutes! However, Mr. Pettipher has again broken the club record with a time of 7 min. 46 sec., whilst another member made an unofficially timed flight of 85 minutes. Hard luck that, or the world record could have been claimed—or, at any rate, the British figure.

I am promised a "glass of milk" by the Press sec. of the ALDERSBROOK M.A.S. if I can find the time. Watch me! This is a club full of enthusiasm for the Area Scheme. There is a good tip for all Press secs. contained in this report—pin a copy of your report up in the club-room, with the date sent. This I am told eliminates the risk of black eyes, etc.

Three contests, SALISBURY AND D.M.E.S., were run off on June 25th, results being:—

Under 150 sq. in.:

- |    |               |     |     |               |
|----|---------------|-----|-----|---------------|
| 1. | Mr. Dickinson | ... | ... | 98.0 sec. av. |
| 2. | C. Selwood    | ... | ... | 75.5 "        |

15 in. wing span:

- |    |               |     |     |        |
|----|---------------|-----|-----|--------|
| 1. | Mr. Dickinson | ... | ... | 50.8 " |
| 2. | R. Read       | ... | ... | 37.5 " |

Scale:

- |    |                          |     |                |
|----|--------------------------|-----|----------------|
| 1. | R. Read (Heston Phoenix) | ... | 25.0 sec. best |
|----|--------------------------|-----|----------------|

Mr. Dickinson's 15 in. model was a parasol job with an aspect ratio of about  $4\frac{1}{2}$ :1 and a terrific climb. He generously handed his prize, 10s., to the Society's funds.

B. Thomas raised the club record for L.W. monoplanes to 85 sec. Some of the 15 in. models are now being used for composite aircraft experiments.

Mr. Dickinson broke the club record with 4 min. 82 sec., and K. Scamell regained the record and won the over 150 sq. in. contest with a single flight of 7 min. 39 sec. O.O.S., his 'plane being lost.

How's this for a testimonial? Ken Scamell won half-a-dozen medals for running at his school sports recently. He attributes his success to the training he obtains in chasing models! As can be seen above, Ken is also no mean performer with the balsa!

Other club records to be raised at the Northern Rally were the H.L. and R.O.G. figures of the BURNLEY M.A.C., when K. A. Moore pushed the former to 181 sec., and the latter to 122 sec. The rest of the club are now after his blood!

Dr. and Mrs. Thurston, together with Air-Commodore and Mrs. Dacre, were present at the invitation meeting held at Halton, when the Northern Heights and High Wycombe clubs were the guests of the Halton M.A.C. Many models flew away, and sympathies are extended to Mr. Wilson, of the Northern Heights, who lost all three of his models! Results of the events were:—

**LIGHT-WEIGHT COMPETITION.**

TTL. OF 8 FLTS.

1. T. A. Wilkinson (High Wycombe) ... \*261 sec.
2. F. E. Wilson (Northern Heights) ... 249 "
3. R. Copland (Northern Heights) ... \*158 "

**" WAKEFIELD " COMPETITION.**

1. H. E. Bell (Northern Heights) ... \*246 sec.
2. F. E. Wilson (Northern Heights) ... \*215 "
3. — King (High Wycombe) ... 182 "

\* One flight only ought of sight, 'plane lost.

**FLYING SCALE MODELS.**

1. J. E. Rees (Northern Heights)... 182 points
2. H. F. Dare (Northern Heights) ... 181 "
3. A. A. Johnstone (Halton) ... 58 "

**PETROL MODELS.**

1. Ross (Northern Heights).
2. Hodsdon (High Wycombe).
3. Greger (Northern Heights).

The inter-wing competition for the London Cup was won by No. 2 wing with 646 points, followed by No. 4 wing with 826, and No. 3 wing with 222 points. A/a. Dubois won the light-weight competition with a total time for three flights of 289 sec.

The TUNBRIDGE WELLS M.A.C. has rented a new flying ground at Frant Bottom, and has lost one model there already. A new stunt is being tried out, in which a petrol model is fitted with a gadget for reducing engine speed after the initial climb. I shall be glad to have further news of this.

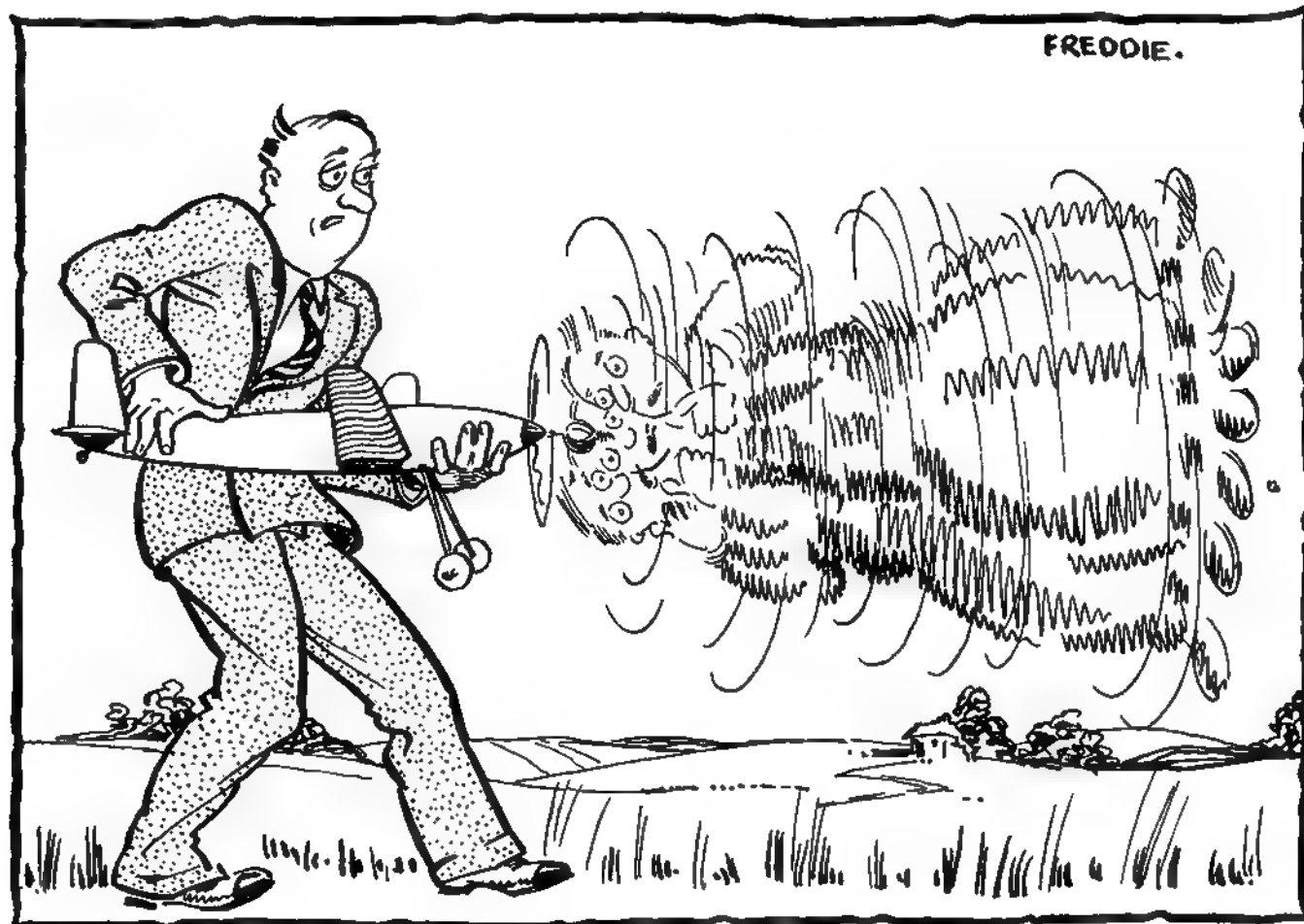
Fifteen entries were received for the PETERBORO' M.A.C. duration contest, two H.L. flights and one R.O.G. being required. W. Smith won with a time of 70 sec., while on a later date this same chap flew his model away for a flip of 6½ min. since when no news has been received of same! Ah me!

Members of the HYDE AND D.M.A.C. have become film stars, a local ciné society having pressganged them. How about me for the "invisible man" part? The president, Mr. Cooper, has donated a silver cup for "round the pole" flying, to be competed for at the annual exhibition in November.

Mr. P. Taylor, of the KINGSTON AND D.M.F.C., has had to take on the sending of reports, the usual member having been hoisted into the Militia. (I wonder how many other clubs have felt the "benefits" of this circumstance?) Mr. Bonner has made a fine flight of 4 min. with an all-balsa glider.

Here's an interesting bit of news from the WAKEFIELD (Yorks.) M.F.C. :—

"The most interesting news is of experiments indoors. A small but varied quantity of rubber was 'obtained.' This was then made up into a number of equal-sized loops, and tested as suggested in the gospel according to Zaic. The loops were then wound to breaking point. From the evidence thus obtained, our mathematical genius produced a set of comparisons. Though the number of loops tested does not permit us to swear to the accuracy, we found that brown rubber can store 1'8 times as much energy as corresponding ½ in. black. The comparison



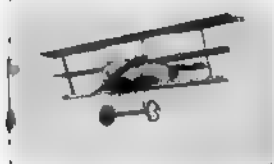
**"I KNEW YOU WERE PUTTING ON TOO MANY TURNS"**

# MEGOW <sup>(Made in U.S.A.)</sup> FOR VALUE

AMAZING VALUE IS OFFERED IN  
THIS POPULAR 12/15" WING SPAN  
RANGE OF FLYING SCALE MODELS

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ALL 'PLANES CAN BE OB-  
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MODEL AIRCRAFT  
TRADE ASSOCIATION

**35-6 ALDERMANBURY, E.C.2**

between  $\frac{1}{8}$  in. and  $\frac{1}{16}$  in. black was very interesting, and showed the  $\frac{1}{8}$  in. stores approximately twice the energy of  $\frac{1}{16}$  in., while their breaking points are just about the same.

"If only those lads would get out of building wings and tails on the same principle as airscrews!"

Would that I had the patience of some people!

The competition for the Cox Cup owned by the GENERAL AIRCRAFT M.A.C. was won by Mr. McNicol with an average time of 91 sec., followed by Mr. Guest, with 58'98, and Mr. Sainsbury with 58'86 sec. I am asked to correct a mistake in the Plugge Cup list given last month, as according to this club's books they have scored 500 points instead of 185, placing them 20th instead of 36th. I am sorry, G.A.M.A.C., but that list was provided by the S.M.A.E., and I shall have to take it up with them. (Are there any other mistakes, you other clubs? If so, I would be glad of the word, so that full correction can be made).

Two members of the YEOVIL AND D.M.A.C. attended the K.P. dinner—and are evidently still feeling the effects! Needless to say, they fully enjoyed themselves. The club is seriously thinking of going in for model boats—the amount of rainwater being quite sufficient to float the fleet.

The Technical Secretary of the BELFAST M.F.C. has been provided with a special insignia, consisting of crossed beer bottles surrounded with broken props. and tail areas! I am told I shall be let into the joke some day! Mr. Rogers has been testing his gas job, but after a fine get-away, the port wing sagged, and—well, you know!

Attempts are being made to form a club in Canterbury, and if enough support is forthcoming, a suitable room

will be rented. Those interested please get in touch with H. G. Kennion, of 21b Burgate Street, Canterbury.

Mr. R. E. Galbreath, winner of the King Peter Cup trials, raised the BLACKHEATH M.F.C. winch launch glider record to 6 min. 20 sec. in so doing. The very but old, old tale of all the efforts and work being left to the usual few was raised at a recent meeting, and the matter has been put on the agenda for further discussion. (I know a lot of other clubs where this point could be well and truly considered).

"The Super Enthusiast"—in other words, McKenzie, won three events at the Northern Heights Gala, and carried off THE AERO-MODELLER Challenge Cup. In winning the Hall Trophy for pusher types he raised the British record to 114 sec. Six members visited Faireys for the Lady Shelley Cup, and Messrs. Chasteneuf, Mackenzie and White placed 3rd, 4th, and 6th.

Three competitions held by the BRADFORD M.A.C. resulted:—

## 100 SQUARE INCH.

(S.M.A.E. fuselage formula, average of 8 flights R.O.G.)

1. W. Lee	...	...	...	44.6 sec. av.
2. J. London	...	...	...	44.5 "
3. T. M. Hart	...	...	...	35.7 "

## OPEN. NEAREST TO 45 SEC. H.L.

1. W. Lee	...	...	...	46.0 sec.
2. J. London	...	...	...	48.5 "
3. G. Marchbank	...	...	...	42.5 "

## PETROL.

(80 sec. motor run. Glide timed. Average of 8 flights).

1. H. Scarfe	...	...	...	17.6 sec.
2. M. H. Maufe	...	...	...	15.8 "
3. J. E. Sutcliffe	...	...	...	10.8 "



These two photos were taken at the R.A.F. "Invitation Day," at Halton Aerodrome, on the occasion of a well-organised rally held recently.

G. M. Gale, of the WALTON AND D.M.F.C., won the R.O.G. duration competition with a time of 177 sec., with G. Dickinson second at 188 sec., and F. Alderton third with 120 sec.

ESSEX POWER M.A.C. members have enjoyed some very good meetings during the past few weeks. Conditions, if a trifle chilly or damp, have been quite favourable for model flying. Quite a number of the members have been finishing off new jobs, and a trim little flyer designed by Mr. Oldham, and a scale Rearwin, built by Mr. Rushen, have given remarkable results without the

usual preliminary crashes. Two new low wing jobs by Mr. Charles and Mr. Wells are still under test, and will soon be satisfactory. This club is certainly extending its activities, having received an application for membership from India. The club was well represented at the Hamley Trophy meeting, but owing to the poor weather conditions most of the members decided to scratch during the contest.

(Am I to take that literally?)

A darn good stunt has been started by the STOCKTON-ON-TEES M.A.C., by which the members all pay

## THE 1939 MIDLAND RALLY

(Organised by the Birmingham Model Aero Club)

**SUNDAY, SEPT. 3rd, at DUNTON HALL FARM, Nr. CURDWORTH**

- |          |  |       |                         |
|----------|--|-------|-------------------------|
| Event 1. | Team Contest for Brandish Rose Bowl (Midland Clubs only) |       |                         |
| „ 2.     | Glider Contest (open)                                    | .. .. | First Prize, Silver Cup |
| „ 3.     | Concours for Rubber-Driven Models (open)                 | .. .. | „ „                     |
| „ 4.     | Light-weight Duration, under 5 oz. (open)                | .. .. | „ „                     |
| „ 5.     | Heavy-weight Duration, over 5 oz. (open)                 | .. .. | „ „                     |
| „ 6.     | Biplane Contest (decentralised) K. and M.A.A. Cup        |       |                         |
| „ 7.     | Petrol Model Contest (open)                              | .. .. | „ „                     |

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At top left is the 5 ft. span glider, with the rubber ball shock-absorber, built by Mr. Farndale, of Bradford; and in the centre a scale Hawker "Hurricane," built by Mr. Sutton Smith, of Wallington. On the right is a nice looking Wakefield model, built by Mr. J. Hayman, of Swansea. At centre left is a speed model built by Mr. R. H. Appleton, of Manston, and at the bottom is a view of some of the models at a recent exhibition organised by the General Aircraft Society.

At bottom centre are shown some members of the Sreatham Club; on the right a "Red Zephyr," built by Mr. Whitworth, of the Kettering Club, and above a Wakefield model, built by Mr. Hawkes, of Stevenage.

1s. per week into a fund, for 16 weeks, and a draw is made each week, the member succeeding being enabled to buy a kit or whatever else he wants right away. A library of books and plans has also been started, and is very beneficial. A really fine photo of a scale model, built by Mr. Lear, is sent in this month, the model being a Heinkel. I like the way the photo has been planned also, and is a distinct contrast to some of the snaps we get sent in.

A prior claim to the rubber ball idea for gliders, nose, for the taking of shocks, one, is sent in by Mr. Farndale, of Bradford, who sends a snap of his 5 ft. glider showing the said sorbo *in situ*. This model has clocked 4 min. 27 sec. H.L.

The SHEFFIELD AIR LEAGUE SOCIETY is holding an open day on September 24th, with the following programme: Climbing contest, spot landing, and a fuselage type R.O.G. duration event. Full particulars can be obtained from the secretary.

Accommodation for a club-room is desired by the TOTTENHAM M.A.C., and anyone who knows of a suitable room is asked to communicate with the secretary. A junior member has recently turned in a flight of over 8 minutes.

A very keen competition for the Bournemouth Power Cup resulted in a win for Mr. G. Rickard, of the BOURNEMOUTH M.A.S. All entrants, except the winner, were using American engines, so at last England came out top. Two 7 ft. gliders were being tested out the same day, and on three occasions were lost.

The NORTH WESTERN AREA is getting down to some good work, many of the recommendations forwarded from this section having been adopted. One very good item to be brought up at the next Council meeting is that all official S.M.A.E. timekeepers should have some mark of distinction to show their capacity, thereby saving time, etc., at meetings where a possible hold-up occurs

through waiting or finding said official gentlemen. The next meeting date is September 9th, owing to the holiday period.

Howard Boys has become President of the NORTH-AMPTON M.A.C. Mr. E. W. Evans holds the H.L. duration record with a time of 8 min. 32 sec., and the 100 ft. towline glider figure with 84 sec. P. T. R. Peach holds the R.O.G. figure with 8 min. 52 sec., and A. Goodman the "unlimited towline" glider at 2 min. 20 sec. (Do you recognise "unlimited" records, Northants?) Mr. Evans's new machine is a six-sided fuselage type, with twin rudders on a dihedralled tail-plane, and has been putting up flights of 8 minutes consistently.

The Lancs boys did well at the WARRINGTON M.A.S. Rally, the results being:—

#### OPEN DURATION (BEST OF 3 FLIGHTS).

	TIME.
1. — Bailey, Lancs M.A.S. ... ..	255 sec.
2. — Tindall, Lancs M.A.S. ... ..	216 "
3. J. Chilton, Stockport and District ... ..	155 "

#### UNDER 150 SQ. IN. AVERAGE OF 3 FLIGHTS.

1. — Mills, Lancs M.A.S. ... ..	101'6 sec.
2. — Warburton, Swinton M.A.S. ... ..	89'0 "
3. — Brown, Ashton ... ..	74'6 "

#### OVER 150 SQ. IN. AVERAGE OF 3 FLIGHTS.

1. — Eifflander, Macclesfield ... ..	123 sec.
2. — Tindall, Lancs ... ..	121 "
3. — Halseman, Liverpool M.A.S. ... ..	87½ "

#### SCALE CONCOURS. 'PLANE.

1. J. West, Warrington M.A.S. Bucker Jungmiester.	
2. — Turner, Macclesfield. Hawker Fury.	
3. Gaskel, Liverpool M.A.S. Hawker Hurricane.	

Complaint is made of one local club, who turned up with the evident intention of upsetting the meeting, and spent the day questioning times and timekeepers, etc. Play the game, you cads, play the game! Thanks are extended to all those who *did* help.

An inter-club meeting between the SOUTHWICK M.A.C. and the Brighton clubs resulted in a win for the former by three events to one. Results were :—

#### LIGHT-WEIGHT DURATION.

Southwick : G. Awoock, A. Hart, H. Dearing, 874 sec.  
Brighton : T. Lance, H. J. Towner, I. Lucas, 857 sec.

#### HEAVY-WEIGHT DURATION.

Brighton : T. Lance, H. J. Towner ... 891 sec.  
Southwick : F. Serase, E. Funnell ... 840 sec.

#### R.O.G. NEAREST TO 45 SECS.

1. J. Cook, Southwick ... 44.7 sec.  
2. H. J. Towner, Brighton ... 44.0 "  
3. A. Hart, Southwick ... 48.9 "

#### OPEN DURATION.

1. D. Marshall, Southwick ... 127½ sec.  
2. T. Lance, Brighton ... 120½ "  
3. F. Serase, Southwick ... 98½ "

Mr. Burchell has given a lecture to the DULWICH M.A.C. members, which was much appreciated. Three medals and two cups have been won this year in various contests, and the enthusiasm is very keen.

A round-the-pole meeting staged by the TWICKENHAM AND D.M.A.C. resulted in a win for F. Norman with 52 sec. An innovation in the form of pole speed flying was won by Mr. L. Sims, with a speed of 24.7 m.p.h. average of three flights.

The SWANSEA M.A.S. has just been formed, and all in that district are asked to get in touch with the Secretaries, Messrs. J. Hayman and G. Marshall, at 77 Grenville Park Road, St. Thomas, Swansea.

The GRAVESEND M.A.C. are lucky in only having to pay 1s. 6d. per night for their club-room, including gas and electric light! Got any nice service flats at the same price? Everyone is busy collecting pictures and making furniture.

In the S.M.A.E. report on page 580 of our August issue, a reference was made to the Chingford Club's delegate not being present at the meeting. This report was, of course, printed exactly as received from the Press Secretary of the Society, and in connection with this incident I expressed an opinion in my notes on page 567. Apparently the S.M.A.E. report was in error, and I have been informed by the Vice-President of the Chingford Club that not only was the club's delegate present at the meeting in question, but that the matter has now been settled to the satisfaction of the S.M.A.E. and the clubs referred to.

Well, that's the lot for this month, and we will away to the woods until the next issue. I hope that our next chat will be brightened by the news of the English team's success in the wilds of New York, and here's hoping that all the rallies, etc., are blessed with much better weather than we have had so far this year. Who heard of summer? I'm blown if I've found any yet. Till next month—be seen' you.

THE CLUBMAN.

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Signature \_\_\_\_\_ July, 1939

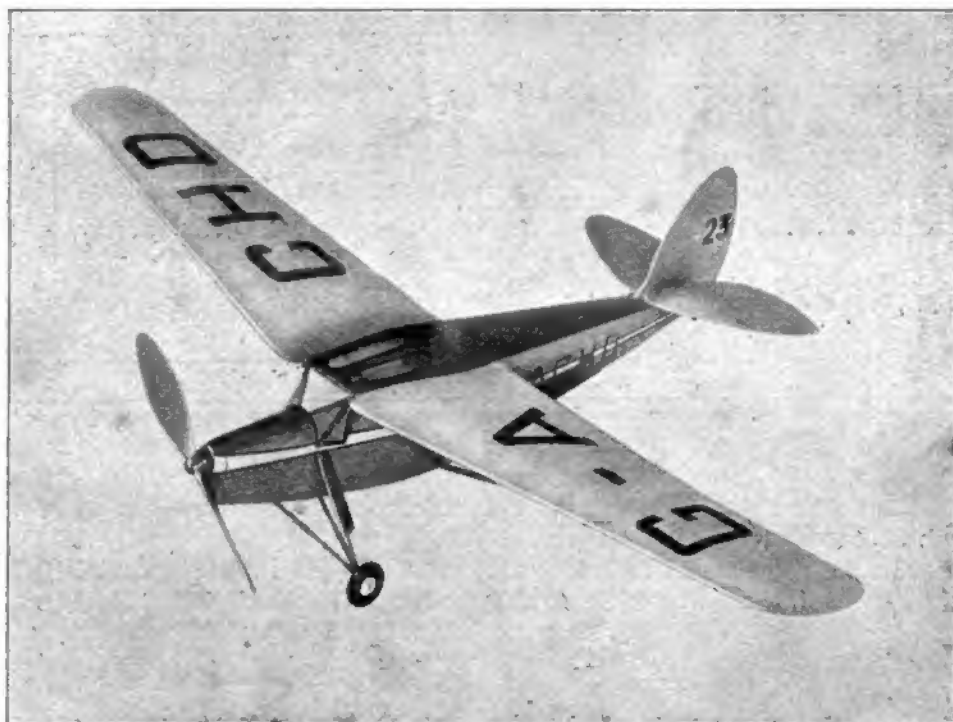
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